GAO

Report to the Chairman, Committee on Armed Services, House of Representatives

NAVY SUPPLY

Naval Air Stations Have Inventory Accuracy Problems

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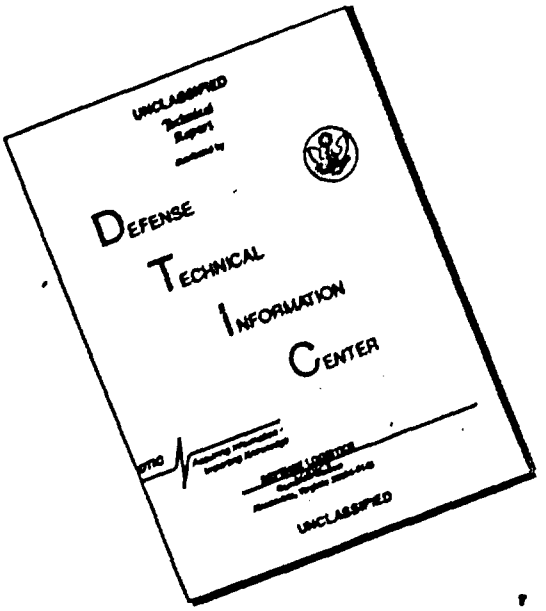

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GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

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December 7, 1989

The Honorable Les Aspin
Chairman, Committee on
Armed Services
House of Representatives

Dear Mr. Chairman:

In response to discussions with your office, we reviewed inventory management policies, procedures, and practices at naval air stations. We found that the Navy needs to improve internal controls over air station inventories.

We are sending copies of this report to the Chairmen, Senate Committee on Governmental Affairs, House Committee on Government Operations, Senate Committee on Armed Services, and Senate and House Committees on Appropriations; the Director, Office of Management and Budget; and the Secretaries of Defense and the Navy.

This report was prepared under the direction of Martin Ferber, Director, Navy Issues. Other major contributors are listed in appendix III.

Sincerely yours,

Arthur A. Goldberg for

Frank C. Conahan
Assistant Comptroller General

Executive Summary

Purpose

The Congress has been concerned with the military services' inventory management policies, procedures, and practices. Because of the continuing congressional interest, particularly that of the House Committee on Armed Services, GAO reviewed such policies, procedures, and practices at naval air stations. GAO evaluated whether (1) air station inventory records were accurate, (2) internal controls for ensuring accuracy were adequate, and (3) reported indicators of the accuracy of inventory records were providing adequate data to managers at higher echelons. The Navy has a total of 37 air stations. GAO conducted detailed audit work at three of the largest air stations and analyzed inventory statistics for 10 others.

Background

In fiscal year 1982, the Navy developed an extensive inventory management improvement program. The Navy introduced over 70 initiatives characterized by frequent field visits, comprehensive training programs, and increased stock point staff resources for physical inventory and quality control. Increased emphasis was placed on improving the accuracy of inventory records, computer systems, and physical security. As part of these initiatives, inventory management was made a top command priority.

Inventories of aviation repair parts, general supply items, and conventional ammunition at the naval air stations were valued at $4.4 billion in 1988. To ensure that inventory records accurately reflect the quantity of materials on hand, air stations have established a physical inventory program that includes periodically counting materials and adjusting records when necessary. Air stations also are to establish internal controls for appraising physical inventory functions and provide higher management with reports and data on inventory record accuracy.

Results in Brief

GAO found that air station inventory records have a high rate of error. Also, internal controls that would help ensure record accuracy are not in place and key management indicators show a picture of much more accurate inventory records than is the case.

Principal Findings

Inventory Records Are Not Accurate

Accurate inventory records are essential. Records showing more materials than are actually on hand can result in critical supply shortages and prolonged delays in filling requisitions. Ultimately, this can affect the readiness of the Navy. Records that show less materials than are on hand can result in excess inventory and unnecessary expenditures for procurement and repair of items. At two air stations, GAO found that 38 percent and 21 percent of the inventory records sampled were in error.

Internal Controls Are Not Adequate

Internal controls are essential to maintaining accurate inventory records. They assist in identifying those human, procedural, or system errors that cause inaccurate inventory records. GAO's work showed that the Navy's system for researching and correcting the causes of inventory record errors was not working. The air stations' research was not completed within established time frames. For example, at one air station, 11 of 16 research cases exceeded the prescribed 45-day deadline.

GAO's work also showed that (1) quality control programs for physical inventory functions were not fully implemented and (2) upper management oversight of the air station inventory management needed improvement. For example, air stations visited by GAO had not established required quality control groups to independently verify that key inventory functions, such as inventory counts and location surveys, were properly performed.

Additional Indicators Need To Be Evaluated

Management indicators of the accuracy of inventory records can show higher commands where additional attention needs to be placed. The current indicators that the higher commands use give a general, overall view of accuracy but do not reflect all errors in the inventory accuracy rates. For example, by excluding stock items with errors of $800 or less when calculating inventory accuracy rates, three air stations were able to eliminate 83 percent of their errors. This resulted in a combined error rate of 7 percent rather than the 40 percent that actually existed. As a result, higher commands did not have a complete picture of inventory record inaccuracies or the need for further analysis.

The Department of Defense (DOD) now is requiring that inventory effectiveness reports provide more data on all inventory record variances.

The Navy also is attempting to improve the accuracy of inventory statistics by implementing a statistical sampling and analysis computer software program for stock points having a specified automated supply system. However, statistical sampling programs have not been developed for other stock points.

Recommendations

GAO recommends that the Navy improve internal controls over air station inventory records, particularly in the areas of researching the causes of errors, implementing an independent quality control program, and overseeing air station inventory practices. GAO also recommends that the Navy implement statistical sampling methods at all air stations.

Agency Comments

DOD partially agreed with GAO's findings and recommendations. However, DOD strongly disagreed with GAO's basic conclusion that inventory record accuracy problems exist at the naval air stations. DOD also disagreed that management attention is lacking and that efforts to improve inventory accuracy have failed to produce results. After reevaluating these matters, GAO made changes to the report but continues to believe that the basic conclusion is valid and that additional management improvements are needed.

In commenting on GAO's recommendations, DOD indicated that a number of corrective actions were planned or underway. These actions include developing approaches to assist activities in performing causative research, ensuring that the air stations fully implement the required independent quality control program, holding workshops that address physical inventory program requirements, and determining if current statistical sampling deployment plans can be accelerated or if alternative sampling programs can be deployed in the interim. DOD's comments are included in appendix II.

Contents

Abbreviations

COMNAVAIRLANT	Commander, Naval Air Force, U.S. Atlantic Fleet
COMNAVAIRPAC	Commander, Naval Air Force, U.S. Pacific Fleet
DOD	Department of Defense
GAO	General Accounting Office
ICE	Inventory Control Effectiveness
MILSTRAP	Military Standard Transaction Reporting and Accounting Procedures

Chapter 1

Introduction

In early 1988 the dollar value of the Navy's aviation inventory of repair parts, general supply items, and conventional ammunition at wholesale and user activities was about $22 billion. The primary shore-based users of these inventories are the 37 naval air stations. They are the custodians of about $4.4 billion of the $22 billion total of aviation materials.

The air stations obtain their materials from the Navy's wholesale supply system—a network of supply centers and inventory control points. For the most part, the aviation inventory control point—the Aviation Supply Office—establishes aviation material requirements, procures needed materials, and determines where to stock materials. The eight naval supply centers receive and store materials for subsequent issuance to the air stations and others. The overall Navy supply system is centrally managed by the Naval Supply Systems Command.

Guidance for Inventory Control

Good inventory control requires precise interplay among a number of diverse functions, including receiving, storing, warehousing, issuing, packing, and shipping. It involves the careful coordination of stock point personnel using a variety of complex computer software and hardware systems. The Navy's inventory system operates under directives from the Department of Defense (DOD) and the more specific policies and procedures of the Naval Supply Systems Command. According to the Navy, this guidance applies to all stock points, including air stations.

In general, Navy guidance requires that air stations take periodic physical inventories of materials to verify an item's stock number, quantity, location, and condition. When inaccurate records are found, air stations are required to review supply transactions for the causes of the errors. If causes cannot be readily determined, air stations are required to correct, or adjust, their records to the actual count. If the monetary value of an inventory adjustment exceeds a set minimum that varies according to the size of the inventory for each air station, the air station must subsequently review the supply records in depth in an effort to identify and correct the inventory errors and the reasons the errors were made.

As part of their internal control system, air stations are required to establish a quality control program for location surveys, inventory counts, inventory record adjustments, and inventory error research. This program is designed to achieve better control over stocks and correct problems.

The monitoring of air station inventory accuracy and the taking of corrective action to improve inventory management are the responsibilities of an air station's higher echelon command—such as the Commander, Naval Air Force, U.S. Atlantic Fleet (COMNAVAIRLANT) and the Commander, Naval Air Force, U.S. Pacific Fleet (COMNAVAIRPAC).

Prior Audits of Supply Management

In fiscal year 1982, the Navy developed an extensive inventory management improvement program. The Navy introduced over 70 initiatives characterized by frequent field visits, comprehensive training programs, and increased stock point staff resources for physical inventory and quality control. Increased emphasis was placed on improving inventory accuracy, computer systems, and physical security. As part of these initiatives, inventory management was made a top command priority.

Although the Navy has made major improvements in its inventory management program, our reviews of Navy supply management since 1982 identified several problem areas. For example, in our May 1986 report[1] we identified significant management problems at the Ships Parts Control Center, the Norfolk Naval Supply Center, and the Norfolk Naval Shipyard, especially concerning confirmation of receipts, conduct of physical inventories, reconciliation and research of inventory discrepancies, accuracy of records, and physical security. Although we made no recommendations, DOD generally agreed with 10 of the report's 11 findings dealing with the Navy.

In our March 1988 report,[2] which assessed some of the problems discussed in our May 1986 report, we stated that the Norfolk Naval Supply Center and the Ships Parts Control Center still had problems maintaining accurate inventory records. Further, the report showed that inventory accuracy reporting was unreliable, thereby impairing the accuracy of information available to Navy decisionmakers. DOD fully concurred with the recommended corrective actions in that report, including the need to address the issue of physical inventory control in the Navy's next annual assessment of internal controls.

[1] Inventory Management: Problems in Accountability and Security of DOD Supply Inventories (NSIAD-86-106BR, May 23, 1986)

[2] Navy Inventory Management: Inventory Accuracy Problems (NSIAD-88-69, Mar. 4, 1988)

Objectives, Scope, and Methodology

The Congress has often questioned the military services, including the Navy, about whether their inventory management practices ensure that supply funds are economically and efficiently used and appropriately targeted to best enhance military readiness. Because of the continuing congressional interest in this area, particularly that of the House Committee on Armed Services, we reviewed inventory management by naval air stations, which are the largest shore-based users of aviation materials. (See app. I for a detailed breakout of the inventories by air station.)

We focused these efforts on whether (1) air stations' inventory records were current, complete, and accurate; (2) internal controls for ensuring inventory record accuracy were reliable and adequate; and (3) management indicators of inventory record accuracy were providing the true extent of record inaccuracies to Navy managers at higher echelons.

To accomplish these objectives, we conducted detailed audit work at three air stations—the Norfolk Naval Air Station, Norfolk, Virginia; the North Island Naval Air Station, San Diego, California; and the Oceana Naval Air Station, Virginia Beach, Virginia. These air stations accounted for more than 25 percent of the total value of air station aviation inventories. In addition, we analyzed reported inventory adjustment rates and other statistics at 10 other air stations.

At the three air stations visited (Norfolk, North Island, and Oceana), we reviewed DOD, Navy, and local procedures and practices concerning air station inventory management and higher command monitoring and feedback processes. We interviewed the officials responsible for managing Navy aviation material inventories. We also reviewed and analyzed pertinent studies, reports, and statistical data.

To assess inventory record accuracy, we reviewed statistical samples of 151 stock numbers at Norfolk, which reported that it generally had not achieved the Navy's inventory adjustment goals, and 134 stock numbers at Oceana, which reported that it had achieved these goals. For each item in the samples at Norfolk and Oceana, we conducted a physical inventory, accompanied by air station inventory personnel. After physically inventorying these items and accounting for receipts and issues in process, we compared our results with the air stations' records. Then, we projected the results of our samples to an estimated population of approximately 49,000 stock numbers at Norfolk and approximately 47,000 stock numbers at Oceana. Our results can be generalized to all

items managed by the concerned air stations with a 95 percent confidence level and at a precision rate of plus or minus 8 percent. In addition, we analyzed inventory statistics reported by North Island and 10 other air stations and computed inventory accuracy rates for each.

To assess how the three air stations resolved inventory inaccuracies, we examined a total of 50 high-dollar value inventory adjustments made during fiscal year 1988 for which the causes of the errors had been identified. We then discussed the inventory adjustments with officials and reviewed research files to determine if prescribed time frames for making adjustments and completing research were adhered to and if the error causes identified were valid and used in addressing systemic problems.

To evaluate inventory management internal controls, we determined how the three air stations resolved inventory inaccuracies and appraised physical inventory functions. In addition, we reviewed the extent of higher command involvement in overseeing air station inventory management. To determine whether management indicators depicted the extent of inventory record inaccuracies, we identified key management indicators and analyzed their usefulness and reliability.

During our review, we obtained inventory information from the Office of the Secretary of Defense, Washington, D.C.; the Office of the Chief of Naval Operations, Washington, D.C.; the Office of the Commander, Naval Air Force, U.S. Atlantic Fleet, Norfolk, Virginia; the Office of the Commander, Naval Air Force, U.S. Pacific Fleet, San Diego, California; the Naval Supply Systems Command, Washington, D.C.; and the Aviation Supply Office, Philadelphia, Pennsylvania.

In conducting our work, we used the same computer programs, reports, records, and statistics the Navy uses to manage aviation material inventories, make decisions, and determine requirements. We did not independently determine their reliability.

Our review was made in accordance with generally accepted government auditing standards and was performed between March 1988 and March 1989. DOD provided written comments on a draft of this report. These comments are summarized and evaluated in the following chapters and are included as appendix II.

Inventory Records Are Not Accurate

Our analysis of inventory data for 13 air stations and our statistical samples at 2 of these air stations showed that a large portion of the inventory records were wrong. Records showing more materials than are actually on hand can result in critical supply shortages and prolonged delays in filling requisitions. They also can result in fraud and theft going undetected. Records showing less materials than are on hand can result in excess inventory and unnecessary expenditures for procurement and repair of items.

Magnitude of Errors is Large

The Navy has adopted various management indicators of inventory accuracy. According to the fleet commands, two of the key management indicators of inventory record accuracy are the record adjustment rate and the monetary adjustment rate. The Navy computes two record accuracy rates. The first, the initial records accuracy rate, compares the total number of records with errors to the total number of records inventoried. The second, the record adjustment rate, eliminates from the computation those records for which the adjustment amount was less than $800. The monetary adjustment rate compares the total dollar value of the stock items inventoried with the dollar value of the adjustments made to bring the inventory records in conformance with the physical counts. However, DOD and Navy policy allow activities to exclude the dollar value of those adjustments that were later reversed, because research determined the cause of the error, from computation of the monetary adjustment rate. In other words, the total dollar value of adjustments reported in any one period is offset by the dollar value of reversed adjustments in that period.

Although allowed by DOD and Navy policy, the reversal of monetary adjustments tends to understate total imbalances in the inventory records. Table 2.1 shows the effect of eliminating inventory adjustment reversals in computing the monetary adjustment rate. The dollar values of fiscal year 1988 reversed adjustments for Norfolk, North Island, and Oceana were $20.5 million, $36.2 million, and $6.5 million, respectively. When these are added to the reported adjustments and the monetary adjustment rate is recomputed, the rate significantly increases.

Table 2.1: Effect of Eliminating Inventory Adjustment Reversals in Computing the Monetary Adjustment Rate

		Fiscal year 1988			
Air station	Inventories conducted	Reported adjustments	Actual adjustments	Reported rate (percent)	Recomputed rate (percent)
[illegible]	[illegible]	$2.1	$22.6	[illegible]	14.8
[illegible]	[illegible]	9.4	45.6	[illegible]	24.8
[illegible]	[illegible]	1.8	8.3	[illegible]	4.3
Total	$530.4	$13.3	$76.5	2.5	14.4

DOD recognizes that gross adjustments combined with reversals measures the total turbulence (i.e., imbalances) in the inventory records. Its August 31, 1989, change to the Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP) manual, which revises the chapter dealing with physical inventory controls, adds this measure to those already used by DOD, e.g., gross monetary adjustment rate, major variance rate, survey accuracy rate, and reconciliation accuracy rate. DOD calls this the total record imbalances rate and defines it as the ratio of gross adjustments and total reversals (total imbalances) to (1) average value of the inventory and (2) value of the items inventoried. Usually, the value of the items inventoried is much less than the average inventory value. When used with the other measures, the total record imbalances rate will give inventory managers additional information to assess the accuracy of their inventory records.

To identify the total turbulence in the inventory records, we computed two unadjusted inventory accuracy rates for the 13 air stations. (See table 2.2.) These included the initial records accuracy rate used by the Navy before adjusting for the less than $800 variances and the total imbalances rate, which is the monetary adjustment rate without offsetting gross adjustments by reversals.

Table 2.2: Unadjusted Inventory Accuracy Rates at Selected Air Stations for Fiscal Years 1987 and 1988[a]

Figures in percent

	Initial records accuracy rate		Total imbalances rate[b]	
Command/air station	**1987**	**1988**	**1987**	**1988**
Atlantic Fleet				
Brunswick	96 4	86 8	0 6	5 5
Cecil Field	86 6	90 4	0 6	0 7
Jacksonville	87 9	9' 0	4 8	0 8
Key West	73 7	75 0	18 5	13 4
Norfolk	44 1	51 2	30 2	14 6
Oceana	63 3	61 6	3 1	4 3
Pacific Fleet				
Alameda	87 2	88 4	0 8	0 9
Barbers Point	32 3	[c]	147 6	[c]
Lemoore	80 0	83 3	4 0	1 7
Miramar	72 5	68 1	4 8	6 9
Moffett Field	87 0	85 0	1 2	4 8
North Island	57 1	62 4	13 8	24 8
Whidbey Island	87 5	87 5	2 1	2 0

[a]Computed rates are based on air stations' quarterly inventory reports for fiscal years 1987 and 1988.

[b]This is the ratio of monetary adjustments plus reversals to the value of items inventoried.

[c]Inventory data for Barbers Point were not computed because the air station's computer input data were erroneous.

Our physical inventory of 285 randomly selected aviation repairables and consumables at the Norfolk and Oceana air stations showed that 86 of the inventory records were in error. The erroneous records included overages or shortages, and the discrepancies ranged from small quantity variances or unit costs to large quantity variances or unit costs. From these statistical samples, we project that, at the time of our audit, 38 percent of the inventory records at Norfolk were in error and 21 percent at Oceana were in error, which equates to 62 percent and 79 percent accuracy rates, respectively.

On the basis of these error rates, we estimate that approximately 19,000 inventory records at Norfolk require adjustments and approximately 9,900 inventory records at Oceana require adjustments. The value of the gross adjustments (overages and shortages not offset by reversals) at these locations is estimated to be approximately $79.7 million and $7.6 million, respectively. The projected dollar adjustments produce a total imbalance rate of 33.6 percent at Norfolk and 2.9 percent at Oceana.

To identify the reasons for the differences between the inventory records and our physical counts, we asked Norfolk and Oceana officials to research transaction histories for the 86 erroneous inventory records found in our samples. As shown in table 2.3, after researching the records, the air stations could not identify the causes of most errors.

Table 2.3: Results of Norfolk and Oceana Research on the Causes of Inaccuracies

	Record inaccuracies	
Research result	**Norfolk**	**Oceana**
Cause not identified	54	28
Receipt not properly posted	2	0
Change notice not properly posted	1	0
Difference in unit package counts	1	0
Total	**58**	**28**

The following two examples illustrate the inventory record inaccuracies for one case that could be explained and one case that could not be explained.

- Norfolk's stock records showed an on-hand quantity of 11 temperature indicators (NSN-6685-00-603-3913) costing $293 each. This item is used on some helicopters and fixed-wing aircraft. We counted 13 indicators, or 2 more than shown in the records. Air station research efforts indicated that a receipt document for two indicators had not been properly entered into the computer; thus, the record quantity had not been increased even though the items were placed in storage.
- Oceana's stock records showed an on-hand quantity of 28 stator turbine seals (NSN-2840-01-154-1129) costing $760 each. This item is used on the jet engine of an A-6 aircraft and is critical to the aircraft's mission. We counted 20 seals, or 8 less than the records showed. Air station research efforts could not explain the loss.

Norfolk and Oceana officials said there were two possible reasons why their research did not identify the causes of most errors. First, Navy regulations limit causative research to only those inventory transactions that occurred in the most recent year; therefore, the causes of errors introduced to the inventory records by transactions more than a year old would not be discovered during causative research efforts. Second, many low-value items in our samples may not have been inventoried for several years prior to our count. Contrary to Naval Supply Systems Command instructions that require that all items be inventoried periodically, Norfolk and Oceana attempt to reduce their physical inventory

work load by limiting inventories of low-value items. Oceana, for example, only inventories low-value items that have had at least two issues in the past year.

Conclusions

Our analysis of inventory data for 13 air stations and our statistical samples at 2 of these air stations show that a large portion of the inventory records are wrong. The initial records accuracy rate and the total imbalances rate are preliminary management indicators of the total turbulence in the inventory records and, along with DOD's other measures, should be considered by inventory managers in assessing the accuracy of their inventory records. The causes of these inventory accuracy problems and our recommended corrective actions are discussed in the following chapters.

Agency Comments and Our Evaluation

DOD did not agree that a large portion of the air stations' inventory records were wrong or that inventory accuracy problems were significant. In addition, DOD stated that none of the data in table 2.2 (previously 2.1) was correct and a 10 percent record adjustment goal that we used to compare with our sample results did not exist. DOD's overriding concern was that we have developed our own measures of inventory record accuracy that lack proper perspective and therefore are misleading. According to DOD, the preponderance of errors in our samples were minor and, therefore, to put a proper perspective on the sample results, we should include the following table.

Stratification of the Combined Results Of the GAO Samples

Strata	RECORDS NO.	RECORDS % of Total	DOLLARS Cum. Var.	DOLLARS % of Total	DOLLARS Mean Var.
= $0	199	69.8%	$0.00	0.00%	$0.00
< $1	214	75.0%	$5.92	0.004%	$0.39
< $25	239	83.9%	$286.48	0.2%	$7.16
< $100	260	91.2%	$1,387.08	0.9%	$22.73
< $800	275	96.5%	$5,938.03	4.1%	$78.13
> $800	10	3.5%	$138,026.18	95.9%	$13,802.62
Totals	285	100.0%	$143,964.21	100.0%	

Further, DOD contends that additional sampling would be in order before taking management action.

We agree that the initial records accuracy rate and the total imbalances rate should not be used as the sole basis for management actions, and we have revised the report to clarify this point. These measures are initial indications of records accuracy problems and should be used in conjunction with other inventory accuracy measures, such as location surveys and reconciliations, to determine the extent of analysis that needs to be done. We have consistently maintained that inventory managers should first look at the total turbulence in the inventory records, and we have defined this to include all record errors when computing initial records accuracy rates and all gross adjustments (adjustments not offset by reversals) when computing monetary adjustment rates.

Although DOD has criticized us in this and past reports for using these measures, it plans to adopt them as part of the reporting requirement for the Inventory Control Effectiveness (ICE) Report, which is prepared quarterly and annually and contains data on the military services' and the Defense Logistics Agency's inventories. In its August 31, 1989, change to chapter 7 of the MILSTRAP manual, DOD requires inventory activities to report (1) the percentage of items inventoried that had an inventory variance (inventory variance rate) and (2) the total record imbalances (total adjustments plus total reversals) as a percentage of

the average value of inventory and the value of items inventoried. These rates will become part of the ICE report.

DOD is correct that the data in table 2.1 of the draft report did not accurately depict the record adjustment and the monetary adjustment rates as defined by DOD. We now more accurately identify the measures we discuss in the report and the data we present in the table. The computational errors that DOD refers to in its comments were limited to three locations and have been corrected in the revised table. The rates we computed and have now more accurately identified are not the same as those used by the Navy and, therefore, DOD's comments on our comparison of the record adjustment and the monetary adjustment rates in the draft report with Navy inventory accuracy goals are appropriate.

In disagreeing with our finding that a large portion of the inventory records were wrong, DOD contends that our statement lacked perspective and was therefore misleading. DOD pointed out that its table showed that 96.5 percent of the records either were correct or contained only minor variances and that only 10 of the records had major variances. We believe DOD's analysis corroborates our finding. Its table shows that 30.2 percent of the combined inventory records for Norfolk and Oceana were wrong. Comparing this rate to our sample results for Norfolk and Oceana—38 and 21 percent, respectively—and the range of error rates (100 percent less the initial records accuracy rate) in table 2.2, which for 1988 run as high as 48.8 percent, initially indicates that the air stations' inventory records are inaccurate. Additionally, the total record imbalances rates in table 2.2, which for 1988 run as high as 24.8 percent, initially indicate that there are problems in the air stations' records.

We recognize, as DOD points out in its comments, that a small number of the erroneous records in our sample accounted for a large portion of the dollar discrepancies we found. We computed the initial records accuracy rate and the total imbalances rate because they would quickly provide information on the total turbulence in the records. We did not stratify our sample by unit cost or item characteristic, as the Navy does, because it would have required a more complex sample design and extended the audit. We developed a sample design that would provide a snapshot of total record imbalances at a point in time. The fact that 12 percent of the erroneous records accounted for 96 percent of the dollar discrepancies is not inconsistent with the fact that usually a small number of inventory items (high dollar unit cost) account for most of the inventory's dollar value. Further, our methodology is not inconsistent with what DOD intends to use and, as we pointed out in the report, it does

provide a basis upon which DOD can determine if more detailed analysis is required.

Internal Controls Do Not Ensure Inventory Record Accuracy

Internal controls are an essential element to ensure effective inventory record accuracy. They assist in identifying those human, procedural, or system errors that adversely affect inventory record accuracy. We found problems with inventory management internal controls at the activities we visited. Specifically, we found that

- research to identify and correct inventory record errors was not completed within established time frames,
- quality control programs for physical inventory functions were not fully implemented, and
- command oversight of air station inventory management could be improved.

Without effective internal controls, air station management can be unaware of inaccuracies in the inventory records and the problems causing these inaccuracies. Also, internal controls inhibit the occurrence of waste, fraud, and abuse. The internal control problems we found demonstrate that inventory management should continue to receive special emphasis in future Financial Integrity Act assessments.

Error Research Is Not Completed Within Established Time Frames

Navy inventory guidance states that two types of research to correct inventory record errors should take place—preadjustment and causative. Preadjustment research is done in an effort to avoid having to make an inventory adjustment, such as when the difference between a physical inventory count and inventory record is due to routine receipts and issues in process. Causative research is done after inventory records have been adjusted in order to preclude the recurrence of inventory record errors.

We found that error research was not always done within established time frames at the air stations visited. Preadjustment research is to be completed within 15 days from the date of an unscheduled inventory and within 30 days from the date of a scheduled inventory. Causative research is to be completed within 45 days after an inventory record has been adjusted. These times are set in an effort to increase the likelihood of determining why an inventory record error occurred. DOD recognizes that, by its nature, causative research is a difficult and labor intensive task that becomes more difficult and less productive with the passage of time.

Our analysis of a total of 50 research cases involving both preadjustment and causative research at the Norfolk, North Island, and Oceana

air stations showed that Norfolk and North Island were generally completing their preadjustment research within the prescribed times while Oceana was not meeting the preadjustment research deadlines. Our sample of 18 cases at Oceana revealed that preadjustment research exceeded the allowed time frames in 12 cases and ranged up to 240 days.

Oceana officials said preadjustment research delays were partly due to the lack of an automated inventory reconciliation program that exists at other air stations. The air stations that are equipped with this program, such as Norfolk and North Island, generally cannot delay their preadjustment research because the program automatically reconciles stock counts and inventory record balances for inventory transactions that occur between the scheduled date of an inventory and the count date. At Oceana, such differences have to be manually researched based on available research time and value of potential inventory adjustments.

We found that North Island completed causative research within the 45-day standard and that research averaged 15 days. Norfolk and Oceana generally were not completing causative research within the prescribed 45-day time frame. At Norfolk, 11 of the 16 research cases reviewed exceeded the deadline. Research times averaged over 67 days with nine cases being completed in less than 90 days and two in more. At Oceana, research times exceeded the deadline for 11 of the 18 research cases reviewed. Oceana's research times averaged over 127 days and ranged from 5 to 272 days. In commenting on our draft report, DOD stated that a wall-to-wall inventory of over 10,000 items had precluded Oceana from meeting the 45-day target date. However, we noted that the wall-to-wall inventory was completed over one year before our field work began and that 15 of the 18 research cases had been inventoried subsequent to the time frame of the wall-to-wall inventory.

According to air station officials, causative research is done beyond the allowed time frame because the original inventory adjustment can be reversed when research finds a reason for an inventory record error; therefore, the monetary adjustment rate can be improved because gross adjustments are reduced by reversals. From the air stations' point of view, this may be a good way to make inventory record accuracy look better, but, as stated in DOD physical inventory guidance, extending the time frame unnecessarily compounds the scope of the research effort and decreases the likelihood of finding the causes of the errors. New supply transactions occur each day, thus increasing the volume of transactions that must be researched.

Quality Control Program Is Not Fully Implemented

To help ensure the integrity of the physical inventory program, Navy guidance (NAVSUPINST 4440.184) requires air stations to implement a quality control program. This program should verify that key inventory functions are performed properly and identify trends and problems in achieving better control over stocks. The key inventory functions required by the Navy are

- location surveys, which are inspections of storage locations to verify the accuracy of recorded stock locations;
- inventory counts, which are physical counts of materials on hand to verify the accuracy of recorded stock quantities,
- record adjustments, which are bookkeeping entries made to bring the inventory records in balance with the physical counts; and
- causative research, which is the review of inventory record transactions in order to identify and help to prevent the recurrence of inventory record errors.

As part of the quality control program, Navy guidance requires that an air station establish or designate an organizational element independent from physical inventory operations to perform program oversight and to validate that the physical inventory functions are performed properly. We found that quality control programs at the air stations we visited were not fully implemented.

The Norfolk air station did not have a quality control group to perform required independent validations. Supply department personnel made checks of location surveys and causative research investigations as a collateral duty. However, the causative research checks were limited to determining if all required documents were included in research files and were organized properly. They did not determine if the causes for the errors had been corrected.

Oceana established a quality control program in February 1988, but initially quality control checks were only performed by personnel directly responsible for the physical inventory functions. Subsequently, Oceana established an independent quality control group, but we found that its review was not being conducted as prescribed. The checks of location surveys and physical inventory counts only consisted of separate samples and did not validate the accuracy of work performed under the physical inventory program.

Also, the checks of inventory adjustments and causative research investigations did not independently validate these functions but merely consisted of cursory checks on the contents and organization of each research file. At the completion of our field work, Oceana was drafting a new instruction intended to correct these problems and properly implement the four quality control checks in the prescribed manner.

North Island was performing quality control checks of location surveys, inventory counts, record adjustments, and causative research but not independently. The first line supervisor of the inventory section was performing the quality control checks. According to North Island officials, these checks were previously performed by quality assurance personnel who were independent of the sections checked. The officials said that the previous method was more appropriate not only because of the perceived lack of objectivity resulting from a supervisor performing quality control checks on his own functional area of responsibility but also because the supervisor cannot properly perform his regular duties due to the time spent on quality control checks.

North Island officials said they assigned the responsibility for these checks to the first line supervisor because of a change in Navy quality control guidance. Naval Supply Systems Command officials said that North Island misinterpreted the change and that independent quality control checks still were required. The change requires that first line supervisors make quality control checks in addition to checks to be performed by an independent quality control group.

Command Oversight Can Be Improved

Air stations' commands are responsible for monitoring air station inventory record accuracy and for taking corrective action to improve inventory management. For example, COMNAVAIRLANT has inventory oversight responsibility for Atlantic Fleet air stations while COMNAVAIRPAC oversees inventory management of Pacific Fleet air stations. We found that command oversight could be improved.

In addition to monitoring other operational aspects of the air stations' operations, fleet commands monitor some of the key management indicators of inventory record accuracy. COMNAVAIRLANT officials said they limited their monitoring of records accuracy to reviews of air stations' quarterly inventory reports, especially the record adjustment and the monetary adjustment rates. These monitoring efforts, however, are not documented, and trend analyses of reported inventory adjustment rates are not performed. We found very little correspondence or other

evidence showing that any questions had been raised concerning air station inventory management, such as questioning situations where there were wide fluctuations in quarterly adjustment rates.

COMNAVAIRPAC's inventory record accuracy monitoring was limited to reviewing reported monetary adjustment rates because officials believed the monetary adjustment rate was the most realistic inventory accuracy indicator for the air stations. The results of their monitoring were well documented and included records of discussion with air station personnel and computer-based trend analyses. However, we found no evidence that corrective actions were directed or taken when the indicators showed that improvements were needed.

As a primary oversight practice, fleet commands periodically test air station inventory record accuracy during their supply management inspections. According to command officials, Atlantic Fleet air stations are inspected every 24 months and Pacific Fleet air stations are inspected every 18 months. These inspections generally consist of checking inventory counts to stock record quantities for a small group of items. The most recent inspections at Norfolk and Oceana showed that 20 and 15 percent, respectively, of the records were inaccurate.

The commands had not initiated corrective action as a result of the causative research information provided them. The Naval Supply Systems Command has established 34 standard codes for classifying and reporting causes of inventory record errors to help correct inventory problems. Our tests showed that the air stations could not identify the causes of most inventory errors. In cases when the causes were identified, the air stations grouped most of the errors into a few error classification codes when reporting to the higher commands. For example, we found that causes of errors that were identified for 13 of the 16 cases reviewed at North Island were reported by the air station under a single standard category—"inventory control, document not posted incomplete" (code 1).

This reporting may be in accordance with the classification system since DOD's comments on our draft report state that the codes provide a sufficiently specific range of error classifications. However, our examination revealed that, under category code 1, seven different types of inventory record errors were actually identified by air station officials, as shown in table 3.1.

Table 3.1: North Island Error Causes Reported as "Inventory Control, Document Not Posted/Incomplete"

Identified causes	Cases
[illegible]	1
[illegible] stock number	4
[illegible] posted	2
[illegible]	2
[illegible]	2
[illegible]	1
[illegible]	1

Our discussions with air station officials about 34 additional research cases at Norfolk and Oceana indicated that these air stations also were combining the causes of inventory record errors into a few error classification codes.

The codes and related statistical data are reported quarterly to an air station's higher command. These results are intended to identify problem areas so that corrective action can be taken. In our discussions with command officials, they were unable to provide any examples where specific corrective action was taken based on the reported error classification codes. According to fleet command officials, after the causes of problems are coded, the problems are aggregated into codes that are too general to provide insight into the actual causes of inventory record adjustments. In commenting on our draft report, DOD stated that the Navy was developing a competency based certification training module to specifically address error classification code selection and analysis.

Financial Integrity Act Assessments Are Needed

The Federal Manager's Financial Integrity Act of 1982 requires agency heads to assess their internal controls annually and to report their findings to the President and the Congress. The Navy provides its assessments to DOD for inclusion in the Secretary of Defense's report to the Congress.

We reviewed the Navy's fiscal years 1986 and 1987 assessments of internal controls to determine if the Navy had identified significant weaknesses in inventory management by shore-based aviation activities. As a result of the fiscal year 1986 assessment, the Navy reported that problems in inventory record accuracy had been identified as a material weakness at a number of activities. To correct this situation, the Navy planned to reemphasize, to commands and activities, the importance of

accurate inventory records and the need to comply with existing regulations.

In the fiscal year 1987 assessment, the Navy reported that corrective action to reemphasize the importance of accurate inventory records had been completed on May 30, 1987; however, a final milestone concerning war reserve stocks was scheduled for completion in December 1990. The internal control problems we found dealing with the accuracy of inventory records demonstrate that inventory management should continue to receive special emphasis in future Financial Integrity Act assessments.

Conclusions

In view of the inventory management problems identified in this report, we believe that it may be premature for the Navy to report the corrective actions as complete and that inventory management should be designated as an issue that will receive special emphasis in future Financial Integrity Act assessments.

Inventory management internal controls are an essential element for ensuring inventory record accuracy because they assist in identifying those human, procedural, or system errors that adversely affect inventory record accuracy. In this regard, the Navy has established inventory management internal controls such as a research system for identifying and helping to correct inventory record errors, a quality control program for appraising physical inventory functions, and an organizational structure to oversee air station inventory management. Currently, these internal controls have not been adequately implemented.

We found that (1) research of inventory record errors often was not done within established time frames, (2) quality control programs for physical inventory functions were not fully implemented by some air stations, and (3) command oversight of inventory management generally had not resulted in corrective action to improve air station inventory management problems.

Recommendations

We recommend that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to improve internal controls over air station inventories. Specifically, we recommend that the Commander

- review the research program and develop approaches to assist activities in completing effective causative research within the specified times in

order to increase the likelihood of identifying and correcting inventory problems;

- direct air stations to fully implement the required independent quality control program for appraising physical inventory functions;
- direct air stations' commands to properly document their oversight of air station inventory management practices and their corrective actions for improving inventory record accuracy; and
- ensure that the Navy's training module addressing error classification code selection and analysis is fully implemented at all field activities and their higher commands.

To provide an additional focus on this area, we further recommend that the Secretary of the Navy designate inventory management improvement as an issue that will receive special emphasis in Financial Integrity Act assessments. This should be one of the areas targeted for an overall evaluation by the Navy.

Agency Comments and Our Evaluation

DOD partially concurred in our findings and recommendations regarding internal controls over air station inventories and suggested language to restate our recommendations and, therefore, obtain full concurrence. DOD also proposed various clarifications for the report. When appropriate, we incorporated the proposed changes.

DOD disagreed that air station research was not timely and that the reason it was prolonged was to reduce monetary adjustment rates. DOD stated that the second statement was incorrect and misleading but offered no explanation why this was so. We clarified the report to show that, in fact, air station officials believe this to be their incentive for finding causes for errors. According to DOD, the first statement implied a systemic internal control problem. We clarified the report to show that the problems we found were limited to the activities visited. However, we still believe that research needs to be completed within established time frames. DOD recognizes this in the MILSTRAP manual in stating that preadjustment research must be done within 30 days and causative research must be done within 45 days. This allows up to 75 days to research those errors. At Norfolk and Oceana, causative research alone was averaging 67 and 127 days, respectively. We have revised our recommendation to reflect DOD's concerns.

DOD agreed that the quality control programs were not fully implemented at Norfolk, Oceana, and North Island; however, it did not agree with our recommendation as stated. DOD disagreed with the implication

that the quality control program is the only method for attaining inventory accuracy objectives. We have modified the report and our recommendation to address DOD's objection. According to DOD, the Navy will ensure that air stations fully implement the required program.

DOD agrees that the fleet commands can improve (1) in documenting trend analysis of key inventory management indicators and (2) in formalizing results of inventory accuracy initiatives. DOD does not agree that command monitoring is limited or that the system for classifying the causes of inventory errors found in research lacks precision. DOD stated that our examples of classification problems indicated a possible execution problem at the local air stations. Regarding command monitoring, DOD pointed out that command officials monitor other operational readiness aspects of the air stations' operations besides inventory accuracy. We have revised the report and our recommendation to more clearly delineate that the limited monitoring we discuss refers only to reviews of records accuracy and to acknowledge the training program the Navy is developing to train personnel on the selection and analysis of error codes. According to DOD, the Navy will conduct workshops to address these and other physical inventory program requirements for all field activities and type commanders, e.g., COMNAVAIRPAC and COMAVAIRLANT.

DOD concurred in our recommendation to emphasize inventory management in Financial Integrity Act assessments and stated that DOD policy specifically mandates review of physical inventory controls as part of the requirements implementing this act.

Management Indicators Do Not Provide a Complete Picture of Record Inaccuracy

Management indicators of inventory accuracy are essential because they provide higher commands an indication of those supply areas requiring additional attention. According to the fleet commands, key management indicators for assessing aviation inventory record accuracy are the record adjustment and the monetary adjustment rates. Although these indicators give a general, overall view of inventory accuracy, they do not give a complete picture of total records inaccuracy because

- inventory errors of $800 or less are excluded in computing the record adjustment rate and
- reversals of prior period inventory adjustments are deducted from current adjustments when the monetary adjustment rate is calculated.

The Navy is attempting to improve the accuracy of inventory statistics. It has developed a statistical sampling and analysis computer software program for stock points having a specified automated supply system. However, statistical sampling programs have not been developed for other stock points.

Low-Value Errors Are Excluded From Accuracy Rates

Navy procedures require air stations to exclude inventory record adjustments valued at $800 or less when calculating the record adjustment rate. The effect of limiting the numerous errors to only those that are in excess of a specified dollar value is to understate the record inaccuracies, as shown in table 4.1.

Table 4.1: Effect of Eliminating Low-Value Errors in Computing the Record Accuracy Rates

	Fiscal year 1988				
Air station	Items inventoried	Adjustments over $800	Total adjustments	Reported rate (percent)	Recomputed rate (percent)
Norfolk	12,700	1,300	6,200	10.2	48.8
North Island	17,300	2,200	6,500	12.7	37.6
Oceana	35,900	900	13,800	2.5	38.4
Total	**65,900**	**4,400**	**26,500**	**6.7**	**40.2**

Table 4.1 shows that the Norfolk, North Island, and Oceana air stations had 26,500 inventory record errors in fiscal year 1988. These air stations, however, were allowed to eliminate 22,100 errors, which is 83 percent of their errors, because they were considered minor variances. As a result, the combined records error rate was 6.7 percent rather than the 40.2 percent that actually existed.

If an inventory record is out of balance with the warehouse quantity determined by a physical count, an error exists regardless of the dollar value of the inventory adjustment. Evaluation of data showing all errors, as well as those in excess of $800, would be helpful in monitoring an air station's physical inventory program. Without these evaluations, higher commands do not have a complete picture of inventory record inaccuracies or the need for further analysis and corrective action.

Prior Adjustment Reversals Distort Current Accuracy Rates

Navy procedures require air stations to deduct reversals of prior period adjustments when calculating monetary adjustment rates. These reversals occur when research of supply records identifies transactions that cause prior adjustments to be in error. Reversals can be made for erroneous transactions up to 1 year earlier but not earlier than the date the item was last inventoried. This procedure understates the monetary adjustment rate for the current period.

Table 2.1 on page 13 shows that the Norfolk, North Island, and Oceana air stations inventoried materials valued at $530.4 million in fiscal year 1988, resulting in inventory adjustments of $76.5 million. Through research of supply records, the air stations were able to identify prior erroneous adjustments totaling $63.2 million, thereby reducing the monetary adjustment rate from 14.4 percent to 2.5 percent.

In some instances, the inventory adjustment reversals for a report period exceeded the current inventory adjustments. As a result, the reported monetary adjustment rate showed an air station to be better than perfect. During fiscal years 1987 and 1988, 7 of 13 air stations reported better than perfect monetary adjustment rates for at least one category of material.

For example, Norfolk inventoried $425,000 of prepackaged aviation materials in the fourth quarter of fiscal year 1987, resulting in $58,000 of inventory adjustments. During that quarter, Norfolk's research of current and prior period inventory adjustments identified erroneous transactions valued at $618,000. These were corrected and inventory adjustment reversals were processed. In calculating the monetary adjustment rate, Norfolk used a negative $560,000 as the value of inventory adjustments rather than $58,000. This resulted in a monetary adjustment rate of a negative 132 percent, compared to an actual rate of 14 percent.

Because air stations use prior inventory adjustment reversals to offset current inventory adjustments, the value of reported adjustments does not portray the extent to which the inventory records were in error at the time of the inventory or the need for further analysis.

Statistical Sampling Is Needed at All Activities

The Naval Supply Systems Command is attempting to improve the accuracy of inventory statistics. It has developed a Statistical Accuracy Techniques and Measurements Analysis (STATMAN) software program, which is a statistical sampling and analysis tool that can provide inventory statistics for Navy stock points having a specified automated supply system. According to the Naval Supply Systems Command, this program should establish an inventory accuracy baseline because it randomly selects items for inventory, which results in an unbiased and statistically correct accuracy assessment.

We could not determine the effectiveness of this program because the Navy was in the process of implementing the program for the air stations. According to fleet commands, those air stations having the required computer system for operating this software, such as North Island and Norfolk, were implementing this program in fiscal year 1989. Air stations without the required computer system, such as Oceana, have not been required to statistically select items for inventory. No statistical sampling program has been developed for their computer systems.

Conclusions

Management indicators of inventory accuracy are essential because they point out potential supply problem areas. For air stations, key management indicators of record accuracy are the record adjustment and the monetary adjustment rates. These indicators give higher management a general, overall view of inventory accuracy but do not provide enough detailed information on total record inaccuracies.

While we recognize the desire of the higher commands to not focus attention on minor matters, we believe that they need to go beyond the overall indicators and also evaluate supplemental information on inventory accuracy. In this way, the commands will have a more complete picture of inventory record problems and can initiate corrective action. For example, reviewing inventory accuracy rates before inventory adjustments valued at $800 or less are eliminated and reversals of prior period adjustments are deducted would give the commands an overview of the magnitude of the actual, total inventory errors.

The Navy's implementation of a statistical sampling approach at certain air stations should provide a better perspective of inventory accuracy. Other air stations have not developed statistical sampling procedures.

Recommendations

We recommend that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to evaluate plans to implement statistical sampling programs at all Navy supply activities and determine if they can be expedited or if alternative programs can be used in the interim.

Agency Comments and Our Evaluation

DOD agreed that statistical sampling is needed to provide an unbiased assessment of overall line item accuracy and suggested language to restate our recommendation to reflect Navy action to provide statistical sampling capability Navy-wide. We have adopted the suggested modification.

In our draft report, we recommended that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to provide additional measures for evaluating the effectiveness of each air station's physical inventory program. Specifically, we recommended that the Commander require that higher commands evaluate (1) separate inventory accuracy rates for scheduled and unscheduled inventories and (2) inventory accuracy rates that reflect all inventory adjustments before deductions are made for low-value errors and reversals of prior period adjustments. DOD disagreed with these recommendations. On the basis of DOD's response and additional information regarding the second recommendation, we deleted these recommendations from our final report.

Much of DOD's objections to our recommendations regarding additional accuracy measures are similar to those presented in chapter 2. DOD's overriding concern throughout its response to our report is that we have developed our own measures of inventory record accuracy that lack proper perspective and, therefore, are misleading. Further, DOD does not believe that separately reporting records accuracy data for scheduled and unscheduled inventories would give additional insight into the overall accuracy of the inventory; the best approach to gaining insight is statistical sampling.

DOD stated in its comments that "Neither the record accuracy rate nor the monetary adjustment rate, defined by the GAO, is a key management indicator." Further, it stated that "The GAO recommendation implies

that the Navy should adopt the new measures that GAO has defined and used by the GAO in this report, specifically record accuracy rate and monetary adjustment rate. The Department strongly disagrees with the utility of either measure".

DOD's major objection to the initial records accuracy rate that we have discussed in this and past reports is that it does not differentiate between major and minor variances. Currently, DOD defines a minor inventory variance as one that is under $800 and therefore excludes it from the computation of the major adjustment rate. The purpose of this delineation is to provide management with insight into the significance of variances such that management directs its attention and resources toward significant errors. While it is appropriate for DOD to concentrate first on the high-value items it should also be concerned about the significant amount of inventory adjustments on the lesser valued items. In the Defense supply system, even a low-value item may be critical to weapon system operations. According to DOD's August 31, 1989, approved change to the MILSTRAP manual, this measure will be required in the ICE report. Because of this new requirement and the Navy's plans to implement statistical sampling techniques Navy-wide, we are not making a recommendation at this time. Since all inventory records will be sampled, this should provide DOD and the Navy the means to evaluate all discrepancies in addition to first concentrating on high dollar variances.

DOD's objection to the monetary adjustment rate that we have discussed in this and past reports is that it does not recognize the purpose of the reversal transaction. According to DOD, when a variance occurs because of an improper posting of a supply transaction, steps need to be taken to ensure that the supply transaction is posted properly. In order to do this and ensure the record quantity and the on-hand quantity remain in agreement, DOD maintains that a reversal transaction must be posted along with the proper supply transaction. A reversal does not negate, according to DOD, the fact that the item had a variance nor should it be double counted. DOD contends that if erroneous inventory adjustments are corrected in subsequent inventories and not reversed, both the original and corrected adjustment will be used to compute monetary adjustment rates—double counting according to DOD. In our opinion, all inventory adjustments, regardless of their cause, should be used in computing the monetary adjustment rates because both times the quantities shown on the record were wrong. The new ICE report requirements now also will include a calculation of total imbalances. Therefore, we are not making a recommendation at this time.

We agree with DOD that the best approach to gaining insight into overall inventory accuracy is through statistical sampling. We also have deleted our discussion on the impact of scheduled and unscheduled inventories on records accuracy because the Navy plans to implement statistical sampling techniques.

Naval Air Station Aviation Inventories as of April 1988

Dollars in millions

Command/air station	General supplies and ammunition	Aviation repairables	Total
Naval Forces Europe:			
Sigonella	$204.0	$61.0	**$265.0**
Atlantic Fleet:			
Bermuda	26.0	18.6	**44.6**
Brunswick	41.0	14.6	**55.6**
Cecil Field	76.0	130.5	**206.5**
Guantanamo Bay	5.0	2.5	**7.5**
Jacksonville	99.0	41.4	**140.4**
Keflavik	118.0	13.3	**131.3**
Key West	28.0	21.7	**49.7**
Norfolk	65.0	191.1	**256.1**
Oceana	92.0	137.3	**229.3**
Pacific Fleet:			
Adak	48.0	33.8	**81.8**
Agana	17.0	34.7	**51.7**
Alameda	24.0	14.1	**38.1**
Barbers Point	119.0	39.1	**158.1**
Cubi Point	45.0	1.7	**46.7**
Fallon	8.0	6.5	**14.5**
Lemoore	142.0	53.7	**195.7**
Miramar	216.0	135.4	**351.4**
Moffett Field	124.0	23.4	**147.4**
North Island	478.0	166.0	**644.0**
Whidbey Island	156.0	80.4	**236.4**
Naval Air Systems:			
Lakehurst	1.0	0.0	**1.0**
Patuxent River	180.0	82.7	**262.7**
Point Mugu	264.0	56.3	**320.3**
Naval Reserves:			
Atlanta	13.6	10.4	**24.0**
Dallas	44.0	68.9	**112.9**
Glenview	8.2	6.7	**14.9**
New Orleans	15.6	18.1	**33.7**
South Weymouth	26.7	21.4	**48.1**
Willow Grove	16.3	11.4	**27.7**
Naval Supply Systems:			
Meridian	[a]	[a]	[a]
Whiting Field	[a]	[a]	[a]

(continued)

Command/air station	General supplies and ammunition	Aviation repairables	Total
Naval Education and Training:			
Chase Field	0.4	6.1	**6.5**
Corpus Christi	120.3	0.3	**120.6**
Kingsville	0.7	4.6	**5.3**
Memphis	2.1	6.5	**8.6**
Pensacola	0.3	34.9	**35.2**
Total	**$2,824.2**	**$1,549.1**	**$4,373.3**

[a]Required aviation materials are maintained by the Pensacola Naval Air Station and the Pensacola Naval Supply Center.

Comments From the Department of Defense

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON D.C. 20301-8000

PRODUCTION AND
LOGISTICS
(L/SD)

JUN 6 1989

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "Navy Supply: Naval Air Stations Have Inventory Accuracy Problems," dated April 4, 1989, (GAO Code 394262), OSD Case 7956. The Department partially concurs with some of the information in the report and, in some cases, offers revised recommendations with which it could concur. The Department, however, is in strong disagreement with the underlying assumption and methodology used by the GAO.

The Department takes strong exception to the implicit and explicit conclusions that (1) significant inventory inaccuracies exist at Naval Air Stations, (2) performance measures and reporting are manipulated to cause accuracy to appear better than it is, (3) management attention is lacking, and (4) efforts to improve inventory accuracy have failed to produce results. These conclusions are incorrect.

The Department has commented on most of the issues contained in this report in its responses to at least six other GAO reports issued since 1986. In the current report (as it has in the prior reports) the GAO has developed its own definitions for performance measures and then attempted to compare them to performance measures used and defined differently by the DoD. The GAO continues to place an inappropriate level of importance on the Record Accuracy Rate it has defined. This measure is highly subject to misinterpretation and misrepresentation. It provides little insight into the magnitude of the actual accuracy or inaccuracy of DoD inventories.

The Department's physical inventory control program policies and procedures are designed to ensure that sound business practices are applied to the stewardship of inventories and use of resources. The

GAO report states that, "... our statistical samples at two air stations showed that a large portion of the inventory records are wrong," and that the "magnitude of error is large." The first statement lacks proper perspective and the second is neither correct nor substantiated by the GAO samples. The samples showed that the preponderance (96.5 percent) of the records were either correct or contained only minor variances. Only 3.5 percent (10 records) of the records had major variances and these few records accounted for 96 percent of the total sample dollar variance, two records accounted for 71 percent of the dollar variance. The Department categorizes errors as minor or major to ensure that DoD applies its limited resources to the most meaningful (priority) corrective actions.

The selective use of data, information, and statistics, along with the omission of pertinent data and information, has resulted in a draft report that lacks proper perspective, is unbalanced, and leads the reader to inappropriate conclusions. The Department of Defense considers objective audits, inspections, and studies as valuable tools for assessing the adequacy of policies, procedures, and systems, as well as program execution. The value of objective analyses in bringing about improvements is important to the Department; however, in its current form, this audit report provides very little basis for action.

The Department's review of the GAO data used in the preparation of the draft report does not indicate internal control material weaknesses in the Navy's implementation or execution of the DoD Physical Inventory Control Program. The data indicates that DoD policies, procedures, and performance measures are sound and that the Navy is executing them properly. The Department is also convinced that the aggressive improvement program set in motion by the Navy in the early 1980s has produced tangible results. The DoD and Navy key program management measures indicate that Navy inventory accuracy has improved and it is anticipated that these improvements will continue.

The Department's detailed comments on the report findings and recommendations are provided in the enclosure. (The DoD positions were discussed with GAO representatives at a meeting on May 15, 1989.)

Sincerely,

Jack Katzen
Assistant Secretary of Defense
(Production & Logistics)

Enclosure

**GAO DRAFT REPORT - DATED APRIL 4, 1989
(GAO CODE 394262) OSD CASE 7956**

"NAVY SUPPLY: NAVAL AIR STATIONS HAVE INVENTORY ACCURACY PROBLEMS"

FINDINGS AND RECOMMENDATIONS TO BE ADDRESSED IN THE DOD RESPONSE TO THE GAO DRAFT REPORT

* * * * *

FINDINGS

- **FINDING A**: **History of Navy Supply Management Problems.** The GAO reported that the 37 naval air stations are the custodians of approximately $4.4 billion of the $22 billion Navy aviation inventory of repair parts, general supply items, and conventional ammunition at the wholesale and user activities. The GAO noted that Navy supply management problems have been documented in numerous GAO, DoD, and Navy reports for a number of years. The GAO reported that, in FY 1982, partly due to the criticism, the Navy developed an extensive inventory management improvement program and made inventory management a top command priority. The GAO observed that, despite that effort, subsequent GAO reviews identified continuing inventory management problems, such as:

  - significant management problems at the Ship Parts Control Center, Norfolk Naval Supply Center, and Norfolk Naval Shipyard concerning (1) confirmation of receipts, (2) conduct of physical inventories, reconciliation and (3) research of inventory discrepancies, accuracy of records, and physical security (GAO Final Report, "INVENTORY MANAGEMENT: Problems in Accountability and Security of DoD Supply Inventories," dated May 23, 1986, OSD Case 7050); and

  - the Norfolk Naval Supply Center and the Ships Parts Control Center continued to have problems and inventory accuracy reporting was unreliable, impairing the information available to Navy decision makers (GAO Final Report, "NAVY INVENTORY MANAGEMENT: Inventory Accuracy Problems," dated March 4, 1988, OSD Case 7402-A). (pp. 8-11/GAO Draft Report)

Now on pp. 8 and 9

DOD RESPONSE: Partially concur. The Department agrees that the Navy developed an extensive inventory accuracy improvement program and made inventory accuracy improvement a top command priority. (The Department notes, however, that the draft report Executive Summary does not acknowledge this fact.)

The DoD does not, however, agree that "despite that effort, subsequent GAO reviews identified continuing inventory management problems,..." The physical inventory control function competes for resources with many other functions and priorities. In the early 1980s, the Navy designated this functional area a top command priority and significantly increased the level of resources devoted to inventory control and management. It is incorrect to imply that the effort and resources have not produced results. It is also a disservice and serves as a strong disincentive for maintaining the program emphasis and resources.

Despite the current conclusions presented by the GAO, the DoD audit responses have shown overall improvement trends when comparative data is used. The GAO report published on March 4, 1988, did not use the 1981/1982 House Armed Services Committee conclusions (i.e., staffing inadequacies, [illegible]oded equipment, inadequate security, lack of accountability, no wall-to-wall inventories, and inattention to audit recommendations) as a baseline to assess the Navy's progress in addressing and correcting the problems experienced in the early 1980s. It was the House Armed Services Committee conclusions from which the Navy established the baseline for its inventory improvement program and it is this baseline the Navy is using for monitoring progress. That baseline was used by the GAO in its November 1984 report, "Navy's Progress In Improving Physical Inventory Controls And The Magnitude, Causes, And Impact Of Inventory Record Inaccuracies In The Army, Air Force, And Defense Logistics Agency" (OSD Case 6273). In that report the GAO stated, "We found that the Navy is making good progress in executing a plan of action to improve inventory controls and security over supply system inventories."

The current draft report cites the findings in two prior audits to substantiate the implied claim that little progress has been made since 1982. The GAO report does not, however, state that in its comments to the GAO Final Report, "INVENTORY MANAGEMENT: Problems in Accountability and Security of DoD Supply Inventories," dated May 23, 1986, the Department could concur in

only three of the eleven Findings that pertained to the Navy. In its response on the draft of the GAO Final Report, "NAVY INVENTORY MANAGEMENT: Inventory Accuracy Problems," dated March 4, 1988 (OSD Case 7402-A), the Department concurred on only five of the eleven Findings. Particular attention should be given to the DoD comments on FINDINGS F, H, and I published as Appendix III in the Final Report.

In recent GAO reports issued since 1986, the GAO has developed its own definitions for performance measures and then attempted to compare them to performance measures used and defined differently by the DoD, such as the Major Adjustment Rate. The GAO continues to use and place an inappropriate degree of importance on the Record Accuracy Rate it has defined. That measure is highly subject to misinterpretation and misrepresentation. It provides little insight into the magnitude of the actual accuracy or inaccuracies of DoD inventories. An excellent example of the very limited utility and misleading nature of this measure was demonstrated by the results of the statistical sample inventory the GAO conducted in the Defense Logistics Agency and reported in its report "INVENTORY MANAGEMENT: Defense Logistics Agency Inventory Accuracy Problems," dated December 1987 (OSD Case 7402). The record accuracy rate of that sample inventory was 63 percent, indicating that over one third of the records were in error. The unit accuracy and dollar accuracy rates were, however, 97.1 and 95.4 percent, respectively. The overall conclusion to be reached from the above is that, while a large number of the records have errors, the preponderance of the errors represent minuscule variances. This same phenomenon has proven to be true in each of the previous sample inventories conducted by the GAO. The misleading nature of the record accuracy rate (as defined by the GAO) is the reason that it is not used in the DoD or the private sector.

It is inappropriate to imply that, in spite of the significant expenditure of resources and management effort, little progress has been made since 1982. This is simply not the case, and it cannot be substantiated by making extensive use of the record accuracy rate measure or other performance measures defined by the GAO, but not used within the DoD. The DoD Inventory Control Effectiveness report contains the official DoD-wide performance data and measures and should be used to judge progress. The Inventory Control Effectiveness report

contains a wide variety of measures (including the materiel denial rate, location audit accuracy rate, location reconciliation rate, etc.), which have all been well defined by the DoD, but were not used by the GAO to assess progress.

- **FINDING B**: **Inventory Records Are Not Accurate.** Based on an analysis of inventory data for 13 air stations and statistical sampling at two air stations, the GAO found a large portion of the inventory records are wrong. The GAO found that the Aviation Supply Office purchased items during the time inventory records under represented the quantities on hand. The GAO noted that the Navy has established record adjustment goals of no more than 10 percent and monetary adjustment goals of no more than 3 percent. The GAO found, however, that almost all of the 13 air stations failed to achieve the Navy goals, with (1) only one air station in FY 1987 and two in FY 1988 achieving the record adjustment goal and (2) only five air stations achieving the monetary adjustment goal in FY 1987 and FY 1988. The GAO also found that a physical inventory of 285 randomly selected aviation repairables and consumables at two of the air stations (Norfolk and Oceana) showed that 86 of the inventory records were in error. Based on the sample, the GAO projected that 38 percent of the inventory records tested at Norfolk and 21 percent of those tested at Oceana were in error. The GAO estimated that, at Norfolk, there are approximately 19,000 erroneous records, valued at $79.7 million; at Oceana, approximately 9,900 erroneous records, valued at $7.6 million. The GAO also noted that, based on the projections, the parallel monetary rate of error was 33.6 percent at Norfolk and 2.9 percent at Oceana. The GAO reported that, after asking Norfolk and Oceana to research the 86 errors in the GAO sample, the air stations could not identify the causes of most of the errors.

  The GAO reported that Norfolk and Oceana officials indicated the following two possible reasons why research did not identify the causes of most errors:

  - causative research covers only the most recent year and would not discover errors introduced to the inventory records prior to the first year (because Navy rules prohibit considering adjustments older than a year in computing the adjustment rate); and

- contrary to Naval Supply Systems Command instructions (which require that all items be inventoried periodically), Norfolk and Oceana generally do not inventory low value items unless they turn over quickly (for example, Oceana inventories only low value items having at least two issues in the past year).

Now on pp 12 to 16

Based on the analyzed data, the GAO concluded that inventory accuracy problems are significant. (pp. 16-22/GAO Draft Report)

DOD RESPONSE: Nonconcur. The Department disagrees that, "Based on an analysis of inventory data for 13 air stations and statistical sampling at two air stations, the GAO found a large portion of the inventory records are wrong." The Department also disagrees that, "Based on the analyzed data, the GAO concluded that inventory accuracy problems are significant." These GAO statements/conclusions are apparently based on the data in Table 2.1 of the draft report, the 38 and 21 percent sample record accuracy rates and the projected estimates of total dollar adjustments calculated by the GAO. The Department nonconcurs on the basis that (1) the first statement lacks proper perspective and is therefore misleading and (2) the second statement is neither correct nor substantiated by the GAO samples. None of the data in Table 2.1 is calculated correctly and the alleged 10 percent goal does not exist. When the sample results are examined in proper context, the preponderance (96.5 percent) of the records were either correct or contained only minor variances. Only 3.5 percent (10 records) of the records had major variances and these few records accounted for 96 percent of the total sample dollar variance; two records accounted for 71 percent of the sample dollar variance. Further, the two records, one in each sample, accounted for 71 percent of the sample dollar variance used to compute the $79 million estimated dollar variance and 75 percent of the sample dollar variance used to compute the $7 million estimated dollar variance. The inordinate influence of these two records on the projections should be recognized. The following paragraphs elaborate further on the above problems.

The GAO has developed its own definitions of measures and compared them to an alleged Navy goal that does not exist. The GAO and the Navy measures are not comparable. The Navy does not have a record adjustment goal of no more than 10 percent. The 10 percent figure, referred to by the GAO, comes from NAVSUP

Instruction 4440.115G, "Physical Inventory Program," dated September 22, 1987. Enclosure 5 of the instruction provides instructions to Navy activities for submitting the feeder data the Navy uses to develop and submit Inventory Control Effectiveness data to the DoD. In paragraph (9) (page 5 of enclosure 5), the instruction specifies how to calculate the "Major Adjustment Ratio" which is equivalent to the "Major Variance Rate" in the DoD Inventory Control Effectiveness report. That paragraph also states that, "When, on the Physical Inventory Report for general supplies, the major adjustment ratio for total line items exceeds ten percent, a narrative explanation of causes and corrective action(s) is required." This is not a Navy goal; it is a threshold the Navy has established to indicate at what point they want to know more than just the raw statistics. The Navy physical inventory performance goals are described and defined on page 29 and 30 of the NAVSUP Instruction 4440.115G.

The Navy has established line item accuracy goals based on four classes of inventory, which take into account specific item characteristics and accepted tolerance levels for each. This approach to line item accuracy is widely used in the private sector and recognizes that not all inventory variances are of equal importance and, consequently, should not receive the same level of management attention or resource expenditure. This concept is in direct opposition to the pure record accuracy rate calculated and used by the GAO, which considers every variance to be of equal importance regardless of the item, its value or the size of the variance. The Navy line item accuracy goals (note that these are internal Navy management goals), by class, are as follows:

Class A - High Dollar Value (U/P > 1K) = 98% $\pm$ 0%

Class B - High Readiness (IMEC 3,4,5) = 95% $\pm$ 0%

Class C - High Variability (AQD > 3 or U/I = to EA) = 95% (at 10% variable accuracy level, i.e. for measurement purposes an inventory is not considered an "error" if the physical count is within 10% of the recorded on-hand balance).

Class D - All other = 95% $\pm$ 5%

The GAO incorrectly calculated the record adjustment rate, which erroneously inflated and incorrectly reported the performance statistics achieved by the air station. In calculating the record adjustment rate, the GAO used the line item statistics (gains, losses, gain reversals, and loss reversals) from the air station Physical Inventory Report (lines 2, 3, 4, and 5), comparing this total to the number of line items inventoried (line 1). The GAO report did not treat line item adjustment numbers (gains and losses) as discrete values. The GAO either assumed the line items reversed were deducted by DoD from the number of gain and loss adjustment count or believes that the count of reversal transactions should be included in the computation of the line/record accuracy rate. This is an error in either case. Neither the Navy nor the DoD reduces the line item adjustment count (lines 2 or 4) by the count of reversals. The count of reversal transactions should not be included in the calculation of line item/record accuracy rates. Inventory adjustments change the record quantity to bring it into agreement with the quantity physically on-hand; reversals do not result in a change to the record quantity and, as such, do not represent items with quantity variances. Reversal transactions simply allow other supply transactions to be processed properly and allow the financial implications to be reflected properly. The inclusion of the count of reversal transactions by the GAO significantly overstates the record adjustment rates in Table 2.1 of the GAO report. For example, Table 2.1 reflects a record adjustment rate of 46.8 percent for Fiscal Year 1988 at Naval Air Station North Island, when the true rate is 37.5 percent. The rates for the other Naval Air Stations depicted on Table 2.1 are also incorrect and need correcting.

The GAO used its definition of the monetary adjustment rate (adjustments not including reversal credit) and compared this to an established Navy measure, which does include credit for prior inventory adjustment reversals. The Navy 3 percent goal was established based on the Navy definition of the Gross Monetary Adjustments. It is inappropriate to develop a different definition and then compare it to the Navy goal. The impact of doing so is illustrated by using the U.S. Atlantic Command air stations. When the air station monetary adjustment rates are computed consistent with the DoD measure and the 3 percent performance, 5 of the 6 U.S. Atlantic Command air stations are shown to have achieved the Fiscal Year 1988 goal of 3 percent. When the GAO redefined the measure, calculated the results based

on their definition, and compared it to the now inapplicable 3 percent Navy goal, only 2 of the 6 are under the 3 percent. If air stations Gross Monetary Adjustment rates are to be compared to the Navy 3 percent goal, then all the Gross Monetary Adjustment rates in Table 2.1 must be recomputed based on the definition contained in NAVSUP Instruction 4440.115G.

The Department strongly disagrees, as it has in prior audits, with the use of the GAO defined record accuracy measure. The GAO record accuracy rate does not recognize that the DoD Physical Inventory Control Program is designed to control inventories of material, not records. The Department manages material units of diverse weight, cube, costs, demand, levels of sensitivity, and weapon system significance. The asset management and controls provided are affected, based on these diverse item characteristics. The record accuracy rate used by the GAO masks these differences and is, consequently, misleading and of very limited management utility. The GAO sample inventory results taken at the Oceana and Norfolk Naval Air Stations provide a vivid example of how the GAO record accuracy, when viewed in isolation, does not consider the item characteristics or the DoD concerns and can lead management to erroneous conclusions. The table below shows the combined results of the GAO sample inventories taken at Norfolk and Oceana. In order to put a proper perspective on the sample results, a table similar to the one below should be included in the GAO report.

Stratification of the Combined Results Of the GAO Samples

	----RECORDS ----		---------- DOLLARS ----------		
Strata	NO.	% of Total	Cum. Var.	% of Total	Mean Var.
= $0	199	69.8%	$0.00	0.00%	$0.00
< $1	214	75.0%	$5.92	0.004%	$0.39
< $25	239	83.9%	$286.48	0.2%	$7.16
< $100	260	91.2%	$1,387.08	0.9%	$22.73
< $800	275	96.5%	$5,938.03	4.1%	$78.13
> $800	10	3.5%	$138,026.18	95.9%	$13,802.62
Totals	285	100.0%	$ $143,964.21	100.0%	

The two samples collectively contain 285 item records, 85 of the records had errors of varying degrees of magnitude. The combined dollar variance of the samples is $143,963. Closer examination of the error records reveals the following:

- 91.2 percent of the item records are either correct or have variances under $100
- The <$100 variances averaged $23 and accounted for less than one percent of the total dollar variance.
- 96.5 percent of the item records either correct or having only minor variances (<$800), as defined by DoD, accounted for approximately 4 percent of the dollar variance.
- Ten records (3.5 percent of the total item records) accounted for nearly 96 percent of the total variance.
- Two of the ten records with major variances accounted for 71 percent of the total sample dollar variance.

The appropriate conclusion is the preponderance of the errors are minor in nature or conversely that very few (approximately 10 percent) of the items with variances account for nearly all (96 percent) of the dollar variances.

The record accuracy rate used by the GAO is a poor measure. Looking at the GAO Norfolk sample results alone further illustrates this point. The record accuracy rate is 61.6 percent, which sets off an alarm that over one third of the items are in error. Further review of the sample results show that 67.2 percent of the errors had variances of under $100. In terms of unit variance, 5 of these items, with unit prices ranging from $.02 to $.17, accounted for 65 percent of the total sample gross unit variance, while accounting for only six one-hundredths of one percent of the total gross dollar variance. Forty-nine of the 58 records (84.5 percent) had variances of under $800, while accounting for only 2.8 percent of the gross dollar variance. Nine of the 58 error records accounted for 97.2 percent of the total dollar variance; in fact, one record with a dollar variance of $95,760 accounted for 70.5 percent of the total sample gross dollar variance. This one item obviously had an inordinate impact on the $79 million dollar variance the GAO projected for the Norfolk Naval Air Station. Similarly, a

single record with a variance of $6,080 in the Oceana Naval Air Station sample accounted for 74.5 percent of the total sample gross dollar variance and, as was the case in the Norfolk sample, one item drove the projected dollar variance.

In view of the fact that, in the case of each of the samples, one item drove the projections and the fact that the precision rate of the GAO sample computations is plus or minus 8 percent, additional sampling would seem to be in order prior to making projections and certainly before taking management action based on them.

The statement, "GAO found that the Aviation Supply Office purchased items during the time inventory records under represented the quantities on hand," is misleading in that it implies procurements were affected. Neither the statement nor the implication is substantiated. The GAO did not compare the dates of procurement with the dates of the adjustments to validate that records were under represented or that they affected procurements. There is no way to verify exactly when the error condition was actually introduced or that it existed at the time of procurement. The GAO did not have specific stage of procurement information or buy information to validate adjustments actually affected buys. Had buys been made, quantities purchased of these items would not have been influenced by the minimal record adjustments reported.

- **FINDING C: Internal Controls Do Not Ensure Inventory Record Accuracy.** The GAO observed that the air station research is not done in a timely manner. The GAO further observed that Norfolk and North Island were generally completing their preadjustment research within the prescribed times, while Oceana exceeded the limits in 12 of 18 cases the GAO sampled, ranging up to 240 days. The GAO noted that Oceana officials said that preadjustment research delays were partly due to the lack of an automated inventory reconciliation program that exists at the other air stations. The GAO also found that the Norfolk and Oceana air stations generally were not completing causative research within the prescribed 45 days. The GAO further found that (1) at Norfolk, 11 of 16 research cases reviewed exceeded the deadline, with research times ranging up to 342 days, and (2) at Oceana, research times exceeded the deadline for 11 of 18 cases, with research times ranging up to 272 days. The GAO noted that air station officials indicated that causative research is done

beyond the allowed timeframe because the inventory adjustment can be reversed when a reason for an error is found--thereby improving the monetary adjustment rate. The GAO concluded however, that, as the DoD physical inventory guidance states, extending the timeframe unnecessarily compounds the scope of the research effort and decreases the likelihood of finding the cause of the errors. The GAO further concluded that research of inventory record errors is often not done in a timely and effective manner The GAO also concluded that the following inventory management internal controls were not adequate:

- the research system for identifying and correcting inventory record errors;
- the quality control program for physical inventory functions; and
- the command oversight of air station inventory management.

In summary, the GAO concluded that the internal control weaknesses demonstrate the need to designate inventory management an issue for special emphasis in future Financial Integrity Act Assessments. (pp. 24-26/GAO Draft Report)

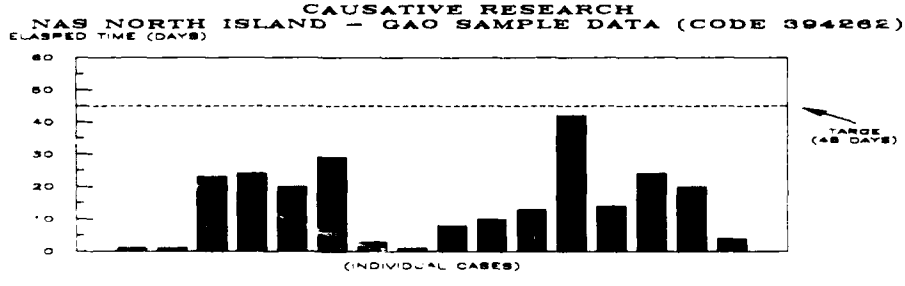
Now on pp. 20 and 21.

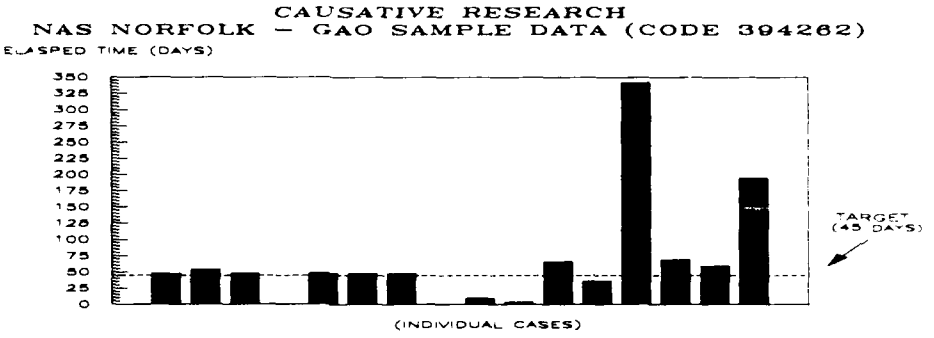
DOD RESPONSE: Partially concur. The DoD does not agree with the GAO statement, "The GAO observed that the air station research is not done in a timely manner." The DoD also does not agree with the GAO statement that the reason for prolonged causative research is to reduce or meet monetary adjustment rates. The Department disagrees with the first statement in that it implies a systemic weakness and an internal control problem, which would indicate some corrective action is required; this is, however, not substantiated by the data collected by the GAO. The Department disagrees with the second statement on the basis that it is incorrect, misleading, and is not substantiated.

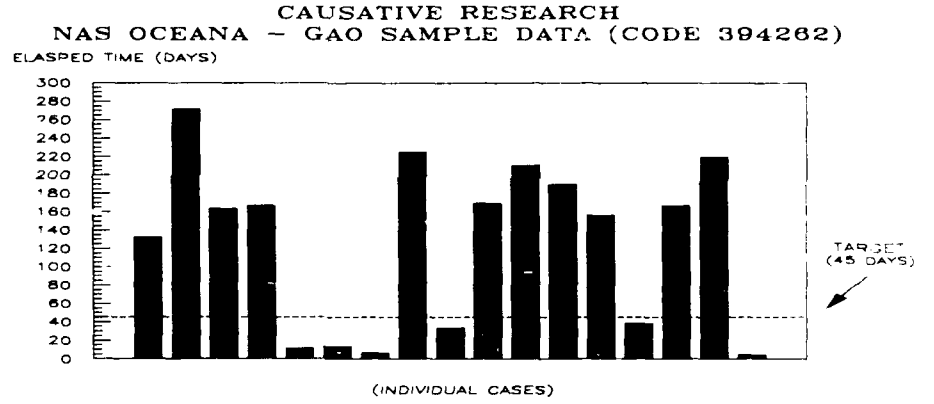
The Department has established 45 days after the date of the adjustment for the completion of causative research in order to increase the likelihood of identifying the root cause for the original variance. The Department recognizes, however, that causative research will exceed the target timeframe. In prioritizing physical inventory resources, the Department allocates its resources first to identifying and correcting inventory variances. Causative research occurs after variances

are identified and corrected. It does not affect the accuracy of the inventory. In recognition of this fact, the Department has not established causative research performance goals.

The DoD takes exception to the selective use of the information collected and presented by the GAO on causative research. During this audit, the GAO sampled causative research cases conducted at the Norfolk, Oceana and North Island air stations. There were 16 research cases reviewed at North Island and, in all cases, North Island met both the preadjustment research and the causative research time standards. All of the cases at North Island resulted from unscheduled inventories; therefore 15 days were allowed for preadjustment research and 45 days for causative research. The North Island Naval Air Station average time was 9.5 days for preadjustment research and 14.8 days for causative research. This information was not presented in the audit report. Also, based on the GAO sample, the average number of days for causative research at Norfolk was 67.4 days with a median of 48 days. The outlier time of 342 days used by the GAO to qualify the condition leads the reader to deduce that most of the 11 cases greatly exceeded the target time. This was not the case; 5 of the 11 were completed within 7 days of the allowed time frame and only 2 of the 11 exceeded 28 days. In the case of the Oceana Naval Air Station, a contractor had been hired to count all repairable assets in a wall-to-wall inventory of over 10,000 inventory items, which precluded their meeting the research phase target dates. In view of the above, the Oceana results are not representative of Navy air station research performance in general. The Oceana causative research results need to be qualified. The graphic representation of the GAO causative research results below, does not indicate a systemic problem.







The Department agrees that physical inventory control by its very nature and importance should receive special emphasis in Financial Integrity Act Assessments. This is already DoD policy. DoD Instruction 4140.35, "Physical Inventory Control of DoD Supply System Materiel," dated June 1986, states that physical inventory control shall be a mandatory element to be addressed in internal control assessments.

The Department responses to alleged weaknesses in the quality control and command oversight of the inventory control

programs are discussed in the DoD responses to FINDINGS D and E below.

- **FINDING D**: **Quality Control Program Is Weak**. The GAO reported that, to help ensure the integrity of the physical inventory program, Navy guidance (NAVSUPINST 4440.184) requires air stations to implement a quality control program. The GAO found that the air station quality control program was not fully or properly implemented and, consequently (1) higher commands have no assurance that data is reliable and (2) the usefulness of the actions taken to address inventory record accuracy cannot be judged.

  - The GAO reported that the Norfolk Air Station did not have a quality control group to perform the required independent validations. The GAO found that, instead, causative research checks by Norfolk supply department personnel were limited to determining if all required documentation was included and research files were properly organized, but there was not a determination that the causes of the errors had been corrected.

  - The GAO reported that Oceana established a quality program in March 1988, with control checks initially made by personnel responsible for the physical inventory functions, and subsequently established an independent quality control group. The GAO found, however, that the independent reviews were not being done, as prescribed, because (1) checks on location surveys and physical inventory counts consisted of separate samples and did not validate the accuracy of work performed under the physical inventory program, and (2) checks on inventory adjustments and the causative research investigations did not provide independent validation, but merely consisted of cursory checks on the contents and organization of each research file. (The GAO did note that the Oceana air station was drafting a new instruction intended to correct these problems and properly implement the four quality control checks in the prescribed manner.)

  - The GAO reported that at the North Island air station, quality control checks of location surveys, inventory counts, record adjustments, and causative research were

being done, by the first line supervisor, and not independently. The GAO noted that North Island officials indicated that quality control checks were more appropriately performed by quality assurance personnel because (1) they were independent of the sections checked and perceived objective and (2) the supervisor could not properly perform regular duties, due to time spent on quality control checks. The GAO also noted North Island officials indicated that the responsibility for quality control checks, previously performed by quality assurance personnel, was assigned to first line supervisors because of a change in Navy quality control guidance. The GAO concluded that the Naval Supply Systems Command officials indicated that the North Island air station officials misinterpreted the change, which actually requires quality control checks by first line supervisors in addition to the checks performed by an independent quality control group.

In summary the GAO concluded that quality control checks of physical inventory functions are not fully or properly made by some air stations. (pp. 26-29/GAO Draft Report)

Now on pp. 22 and 23

DOD RESPONSE: Partially concur. The Department agrees that the quality control program was not fully implemented at the three air stations visited. The Department does not, however, agree that higher commands have no assurance that data is reliable or that the usefulness of the actions taken to address inventory record accuracy cannot be judged.

The Department must address each of the three Naval Air Stations separately. Norfolk did not have a full time staff dedicated to quality control. The required sampling and process validations were, however, being performed as collateral assignments by planning division personnel and the Inventory Accuracy Officer, in the absence of a full time staff. The quality control efforts performed were directed to identifying the cause of the error, but documentation was not evident to show process/procedural changes had been implemented to remove error cause.

Oceana was not conducting independent reviews (semi-annual baselines) as required by the Navy instruction. The quality control checks performed by the location survey and physical inventory count team leader did, however, validate the accuracy

of the work performed in support of the physical inventory program. Both of these functions conform to lot acceptance sampling procedures outlined in the Navy instruction and require separate samples to be taken from discrete lots. A discrete lot is defined as the work accomplished by one individual in a specific time period, usually one work day. This method allows a lot to be rejected and reworked if more than the acceptable number of errors are found.

The Navy recognizes that North Island misinterpreted the quality control guidance. In order to resolve these misinterpretations and fully explain the quality control process, two workshops have been scheduled at the end of June 1989, for field activities and type commanders. These workshops will also address all the other physical inventory program requirements.

- **FINDING E**: **Command Oversight Is Limited**. The GAO observed that the Commander, Naval Air Force, U.S. Atlantic Fleet, and the Commander, Naval Air Force, U.S. Pacific Fleet, have inventory oversight responsibility for their respective fleet air stations.

  - The GAO reported that, while the Atlantic Naval Air Force Commander is responsible for monitoring inventory record accuracy and taking corrective action to improve inventory management, (1) command monitoring is limited and covers only some of the key inventory management indicators, (2) monitoring efforts are not documented and trend analyses of reported inventory adjustment rates are not performed, and (3) very little correspondence was evident showing that questions were raised concerning air station inventory management (such as situations where there were wide fluctuations in quarterly adjustment rates).

  - The GAO further reported that inventory record accuracy monitoring by the Naval Air Pacific was limited to reviewing reported monetary adjustment rates, because officials were not familiar with other inventory management indicators. The GAO noted, however, that while the results of the monitoring were well documented and included records of discussion with air station personnel and computer-based trend analysis, there was no evidence that corrective action was directed or taken.

The GAO noted that the fleet commands relied primarily on periodic air station inventory record accuracy testing during supply management inspections, conducted every 24 months for the Atlantic fleet stations, and every 18 months for the Pacific fleet stations. The GAO reported that the most recent inspections at the Norfolk and Oceana air stations, using judgmentally selected items, showed 20 percent and 15 percent of the records (respectively) were inaccurate. The GAO found that the commands have not initiated corrective action as a result of the causative research information provided them. The GAO observed that its tests showed that the air stations could not identify the causes of most inventory errors and, where causes were identified, the air stations grouped most of the errors into too few error classification codes when reporting to the higher commands. The GAO concluded that the classification system lacks precision, as evidenced by the causes of errors for example, 13 of the 16 cases it reviewed at North Island, were reported under a single category--"inventory control document not posted/incomplete"--when the air station officials actually identified seven different types of inventory errors. The GAO also found that command officials were unable to provide any examples where specific corrective action was taken based on the reported error classification codes. The GAO reported that command officials indicated that after the causes of problems are coded, the problems are aggregated into codes that are too general to provide insight into the causes of inventory record adjustments. The GAO concluded that command oversight of inventory management is limited and corrective action by commands to improve air station inventory management is scarce. (pp. 29-33/GAO Draft Report)

Now on pp. 23 to 25

DOD RESPONSE: Partially concur. The DoD does not agree with the GAO conclusion that command monitoring is limited. The fleet commands do not provide day-to-day guidance to air stations; they provide general direction to the supply officer. Monthly monitoring actions include (1) review of physical inventory (e.g., Gross Monetary Adjustments, Location Accuracy), (2) financial inventory (e.g., carcass tracking charges), (3) warehouse refusals, and (4) point of entry effectiveness reports. Copies of these operational readiness reports were shared with the GAO during the audit.

The DoD disagrees that the fleet commands sampling during a Supply Management Inspection was judgmental. The term judgmental implies a lack of precision (rough guess) or that acceptable analytical techniques were not in use. This is not the case. In the absence of an on-line inventory sampling program, the fleet commanders conduct valid samples of 50 consumables and 50 repairables randomly selected from the air station stock records, and 50 consumables and 50 repairables randomly selected from the shelf and compare to the stock records, for a total sample size of 200 items. This approach provides meaningful accuracy projection to assess material handling processes based on the item characteristics (e.g., consumable/repairable). Additionally, during the Supply Management Inspection, the air station inventory accuracy program results are determined and analyzed, and corrective actions are addressed and monitored via quarterly status reports.

The Department also does not agree with the GAO conclusion that the error classification system lacks precision. The 34 codes provide the maximum possible range when using a one-digit character (25 alpha + 9 numeric = 34). The error code definition provides information on the function/operation in which the error occurred (receiving, storage, inventory control or physical inventory), the type of transaction error (i.e., data entry, duplicate posting or not posted) and allows the Navy to capture information on avoided adjustments that are resolved during pre-adjustment research as well as during causative research.

The problem is not the number of codes (34 codes are ample); the problem appears to be the selection of the appropriate code. The examples highlighted in Table 3.1 of the GAO report indicate a possible execution problem at the local air station. To ensure consistency and enhance user knowledge, the Navy is developing a competency based certification training module to specifically address error classification code selection and analysis. This module is scheduled for delivery in June 1989.

The DoD does agree that the fleet commands can improve (1) in documenting trend analysis of key inventory management indicators and (2) in formalizing results of inventory accuracy initiatives.

- **FINDING F**: **Financial Integrity Act Assessments Are Needed**. The GAO reported that, as a result of the FY 1986 assessment of internal controls, the Navy reported that problems in inventory record accuracy had been identified as a material weakness at a number of activities. The GAO further reported that, to correct the problems, the Navy planned to reemphasize to the commands and activities, the importance of accurate inventory records and the need to comply with existing regulations. The GAO found that, notwithstanding the fact the FY 1987 Navy assessment reported that corrective action had been completed on May 30, 1987, significant inventory problems continue to exist. The GAO concluded (1) that it was premature for the Navy to report that corrective actions were complete and (2) that inventory management should again be designated as an issue that will receive special emphasis in future Financial Integrity Act assessments. The GAO did recognize that the Navy has established a number of inventory management controls, including:

  - a system for identifying and helping to correct inventory record errors;
  - a quality control program for appraising physical inventory functions; and
  - an organizational structure to oversee air station inventory management.

  In summary, however, the GAO concluded that these internal controls have not been adequately implemented to date. (pp. 33-34/GAO Draft Report)

Now on pp 25 and 26

DOD RESPONSE: Partially concur. The Department agrees that the Navy has established a number of inventory management controls; however, the Department does not agree that this report substantiates the conclusion that significant inventory problems continue to exist or that it was premature for the Navy to report that corrective actions were complete with regard to the material weakness identified as a result of the Navy FY 1986 assessment. Based on the DoD response to FINDINGS A, B, and C, in particular, the conclusion that significant inventory problems continue to exist is not substantiated by this report. Further, the specific alleged problems identified in this audit report are not identical to those in the FY 1986 material weakness. The DoD Internal Management Control Program requires that the heads of

DoD Component make assessments, identify appropriate weaknesses, and develop and execute action plans to correct the weaknesses they identify. This is exactly what the Navy did with regard to the weakness it identified in its Fiscal Year 1986 assessment. The GAO report indicates that the Navy has closed this weakness; this is incorrect. This weakness is still open and will not be closed until the last milestone is completed in December 1990.

The Department does not agree that the GAO report identifies internal control weaknesses. However, the Department does agree that this functional area (by its very nature and importance) should receive special emphasis in Financial Integrity Act assessments. This Department policy is promulgated in DoD Instruction 4140.35 (see DoD response to FINDING C).

- **FINDING G**: **Inventory Results Are Not Separated.** The GAO reported that the key management indicators of inventory accuracy, the record adjustment and monetary adjustment rates, give a general, overall view of inventory accuracy, but they mask the true condition of inventory records because scheduled and unscheduled inventory results are lumped together. The GAO observed that, when the results of scheduled and unscheduled physical inventory are combined, the unique characteristics of each is not captured. The GAO noted that because unscheduled inventories often are triggered by known or suspected problems they give an overly pessimistic view of the state of inventory accuracy. For example, the GAO reported that in FY 1988 the combined record adjustment rate, based on unscheduled and scheduled inventory results, was 52.2 percent for the Norfolk, North Island, and Oceana Air Stations--93.9 percent for unscheduled inventory items and 27.4 percent for scheduled inventory items. The GAO further reported that the parallel combined monetary adjustment rate for these air stations was 14.4 percent, but the unscheduled inventory rate was 25.1 percent, while the scheduled inventory rate was 5.9 percent.

  The GAO observed that, on the other hand, scheduled inventory results can provide an overly optimistic picture of inventory accuracy. The GAO also found that air stations can distort reported inventory statistics by the scope and timing of physical inventories. The GAO reported, for example, that during the first quarter of FY 1988, the Alameda Naval Air Station reported inventorying four classified ammunition items, valued at

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approximately $6 million--all of them stored in a more secure environment than most other items, thus limiting the probability of loss. The GAO concluded that, based on these four items, the Alameda Naval Air Station was able to report perfect inventory accuracy for ammunition during the first quarter of FY 1988 and produced a FY 1988 cumulative inventory inaccuracy rate that was artificially low. (pp. 38-39/GAO Draft Report)

DOD RESPONSE: Partially concur. The DoD disagrees with the GAO reference to, "Key management indicator of inventory accuracy, the record adjustment and monetary adjustment rate,..." Neither the record accuracy rate nor the monetary adjustment rate, defined by the GAO, is a key management indicator. Line item accuracy rates are established based on item characteristics (Class A-B-C-D), as indicated in the DoD response to FINDING B. The DoD definition of Gross Monetary Adjustments is also discussed in the DoD response to FINDING B. The Department disagrees with the GAO statement, "...air stations can distort reported inventory statistics by the scope and timing of physical inventories." This statement implies that air stations are falsifying reports. The statement is not substantiated and is inappropriate. The Department agrees with the GAO observation that the current Inventory Control Effectiveness report does not provide an overall view of inventory accuracy because scheduled and unscheduled inventory results are lumped together. The Department does not, however, agree that maintaining separate statistics on scheduled and unscheduled inventories would overcome this problem.

The example used by the GAO to make its point (i.e., that air stations can distort reported inventory statistics by the scope and timing of physical inventories) is totally inappropriate. The DoD requires that at least an annual inventory be conducted on all arms, ammunition and classified items. Based on the Ammunition and Explosives Security Risk Category, ammunition items often require more frequent inventories. The DoD considers this to be a prudent management action, designed to ensure the tightest possible control over these sensitive and costly items. It should also be pointed out there are two separate quarterly Inventory Control Effectiveness reports: one for General Supplies and one for Ammunition.

The Department agrees with the GAO observation that the current Inventory Control Effectivenss report does not provide an

overall view of inventory accuracy because scheduled and unscheduled inventory results are lumped together. That is why the DoD uses several indicators and techniques to assess inventory accuracy and is instituting an annual random statistical sample DoD wide. Viewing unscheduled inventories separately from scheduled inventories would not provide any additional insight into the overall accuracy of the inventory. Looking at unscheduled inventories would provide an overly negative picture, since these inventories (as the GAO pointed out) were conducted due to known or suspected errors. Likewise, looking only at the scheduled inventories would provide an overly positive picture, since the majority of these inventories are conducted on controlled items (those where increased attention and safeguards are the norm) and, consequently, the probability of discrepancies is less by design.

The DoD Inventory Control Effectiveness report does, however, contain some measures that give insight into the overall accuracy of the Department's inventory. Two percentages (**GROSS ADJUSTMENT RATES**) are calculated by dividing the total annual dollar value of gross adjustments by the average dollar value of the total inventory and the total dollar value of the items physically inventoried during the year, respectively. The two resultant values are then multiplied by 100, converting the decimal values to percentages. The two adjustment rates form upper and lower bounds of the true adjustment rate for the entire inventory. The current DoD-wide upper and lower bounds for general supplies are approximately 5 and 2.5 percent, respectively. These two measures are discussed in more detail in the DoD response to FINDING J.

The best approach to gaining insight into the overall accuracy of the inventory is through statistical sampling. This is one of the reasons the Navy has invested so heavily in the Statistical Accuracy Techniques and Measurements Analysis System and the DoD is requiring an annual random statistical sample, the results of which will be reported separately on the Inventory Control Effectiveness report.

- **FINDING H**: **Statistical Sampling Is Needed**. The GAO reported that the results of the scheduled and unscheduled inventories may not be representative of overall air station inventory accuracy because the inventoried items were not selected by using

statistical sampling methods. The GAO noted that its random samples, as well as the air stations inventory counts, showed that a large portion of the inventory records at Norfolk and Oceana were inaccurate.

The GAO observed that the Naval Supply Systems command is attempting to improve the accuracy of inventory statistics. The GAO reported that the Command has developed a Statistical Accuracy Techniques and Measurements Analysis software program, which should establish an inventory accuracy baseline because it randomly selects items for inventory, which results in an unbiased and statistically correct accuracy assessment. (The GAO noted that effectiveness could not be determined during its review because the Navy was in the process of implementing the program for the air stations.) The GAO further reported that, according to fleet commands, those air stations having the required computer system for operating this software, such as North Island and Norfolk, will implement this program in FY 1989. The GAO also reported that those air stations without the required computer system, such as Oceana, have not been required to statistically select items for inventory and no statistical sampling program has been developed for their computer systems. (pp. 38-39/GAO Draft Report)

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DOD RESPONSE: Concur. The Department agrees that statistical sampling is needed to provide an unbiased assessment of overall line item accuracy. The Naval Supply Systems Command developed the Statistical Accuracy Techniques and Measurements Analysis System to provide an improved method and measure for inventory accuracy. The program was developed as part of the Uniform Automated Data Processing System for Stock Points system that currently supports material management and physical inventory requirements at stock points with a total inventory value of $26,510 million. The capability of both the Uniform Automated Data Processing System for Stock Points and the Statistical Accuracy Techniques and Measurements Analysis systems is available to access 90 percent of the $29,400 million total wholesale/retail general supplies inventory. Taking into consideration the scope of the implementation requirement at thirty different activities, an incremental implementation strategy was adopted. As of July 1985, all eight Naval Supply Centers (representing $20,903 million or 71 percent of the total inventory value) were implemented. By July 1987, the completed implementations accounted for $23,528 million or 80 percent of

the total inventory value. As of September 1988, $24,437 million or 83 percent of the inventory was covered. Norfolk and North Island provided their first Statistical Accuracy Techniques and Measurements Analysis reports in second quarter Fiscal Year 1989. The remaining activities using the Uniform Automated Data Processing System for Stock Points will implement the Statistical Accuracy Techniques and Measurements Analysis program by September 1989. For the activities that are not supported by uniform stock point system (10 percent of the total inventory value) the Statistical Accuracy Techniques and Measurements Analysis capabilities were incorporated as a Stock Point ADP Replacement modernization requirement and will be delivered during the 1990s.

The Department is making significant investments to modernize its computer systems and provide ennanced tools; however, deployment is a matter of prioritization within existing resource constraints.

It should also be noted that the Department is instituting an annual random sample physical inventory. The results of the annual random sample inventory will be reported by each of the DoD Components in the Inventory Control Effectiveness report. The policy for the random sample is contained in DoD Instruction 4140.35 and the detailed instructions will be contained in the reissuance of Chapter 7 of the Military Standard Transaction Reporting and Accounting Procedures, which will be issued as an approved change in July 1989.

- **FINDING I**: **Low Value Errors Are Excluded From Accuracy Rates.** The GAO reported that Navy procedures, which require air stations to exclude inventory record adjustments, valued at $800 or less when calculating the record adjustment rate, limit numerous errors only to those that are in excess of a specified dollar value, thus understating the record adjustment rate. The GAO found that the Norfolk, North Island, and Oceana Air Stations had 34,400 inventory record errors in FY 1988, which should have resulted in a 52.2 percent record adjustment rate, but 30,000 errors were eliminated (87 percent of the errors), because they were considered minor variances, resulting in a record adjustment rate of 6.7 percent being reported. The GAO concluded that data showing all errors, as well as those in excess of $800, would be

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helpful in evaluating an air station physical inventory program. (pp. 41/GAO Draft Report).

DOD RESPONSE: Nonconcur. The DoD does not agree that the calculation of a pure record accuracy rate is helpful in evaluating the physical inventory program at an air station or elsewhere. The DoD responses to FINDINGS A and B discuss in detail the limited value and misleading nature of the pure inventory record accuracy rate calculated and used by the GAO. (It should be noted, however, that internal Navy reporting has always required the calculation and reporting of all records with a variance, regardless of the value of the variance, in addition to the calculation and reporting of the Major Variance Rate used throughout the Department. It should also be noted that in the calculation of DoD dollar accuracy rates, all adjustments are included regardless of their dollar value.)

The major variance level figure (e.g., $800) is intended to tell DoD management what proportion of the total inventories conducted resulted in dollar value variances (gain or loss adjustments over $800) to inventory records. That is how it is defined, that is how it is calculated, and that is how it is reported on the DoD Inventory Control Effectiveness report. The Navy is correctly following the DoD procedures for the calculation and reporting of the major variance rate. The objective of this measure is to identify what proportion to the total inventories conducted resulted in significant variances. The GAO statistical samples clearly demonstrate this is exactly what it does. In the GAO sample taken at the Norfolk Naval Air Station, 84.5 percent of the records in error had dollar variances of under $800, but their cumulative dollar variance accounted for only 2.8 percent of the sample total gross dollar variance. The nine records with major variances (15.5 percent of the records with variances) accounted for 97.2 percent of the total sample gross dollar variance. Even if the one very large major variance of $95,760 were removed from the sample, the minor variances would still only account for 10.5 percent of the total gross dollar variance. The establishment of criteria to define major variances versus minor variances is designed to provide management with insight into the significance of variances such that management directs its attention and resources toward the significant. This is what this major adjustment rate ($800) measure has historically measured and its use supports the DoD policy contained in DoD 4140.35 which states, "Resources shall be

directed toward achieving force readiness goals such that maximum returns will be derived from the resources applied."

The sample physical inventories conducted by the GAC (as part of this audit as well as previous audits) and the DoD experience, strongly indicate the current threshold of $800, used to define a major variance, may be much too low.

- **FINDING J: Prior Adjustment Reversals Distort Current Accuracy Rates.** The GAO reported that Navy procedures require air stations to deduct reversals of prior period adjustments when calculating monetary adjustment rates--thereby understating the monetary adjustment rate for the current period.

The GAO found that, in FY 1988, the Norfolk, North Island, and Oceana Air Stations inventoried materials valued at $530.4 million, resulting in inventory adjustments of $76.5 million. According to the GAO, these were reduced to $13.3 million in reported reductions when the air stations were able to identify *prior erroneous* adjustments totaling $63.2 million, which reduced the monetary adjustment rate from 14.4 percent to 2.5 percent.

The GAO noted that, in some instances, the inventory adjustment reversals for a report period exceeded the current inventory adjustments and, as a result, the reported monetary adjustment rate showed the air station to be better than perfect. The GAO reported that, during FY 1987 and FY 1988, seven of 13 air stations reported better than perfect monetary adjustment rates for at least one category of material. The GAO concluded that, because air stations use prior inventory adjustment reversals to offset current inventory adjustments, the value of reported adjustments does not portray the extent to which the inventory records were in error at the time of the inventory. (pp. 42-43/GAO Draft Report)

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DOD RESPONSE: Nonconcur. The DoD does not agree that prior adjustment reversals distort current accuracy rates since the Gross Monetary Adjustment Rate measure affected by the reversal transaction was only one of several measures used to assess inventory accuracy at the air stations. The Department calculates gross adjustment rates for both the current quarter and year-to-date which is effected far less by prior quarter reversal than is the current quarter. It should also be noted

that the DoD has not established a goal for this measure and that the internal Navy 3 percent goal takes into consideration the definition and method of calculation. It is the Department position that the new annual statistical sample will provide an accurate overall picture of DoD inventory accuracy whereas the current Inventory Control Effectiveness report was never intended to do so.

The Gross Monetary Adjustment Rate nets the gains plus losses minus reversals to provide a financial impact indicator of a physical inventory. For management purposes, a physical inventory consists of a physical count, post-count validation, preadjustment research, and causative research. Therefore, it is important to distinguish between physical inventory results and inventory accuracy indicators.

A high proportion of physical inventory reversals indicates the Physical Inventory Program effectiveness. Reversals indicate the DoD is successfully identifying and correcting the errors on specific actions. If the DoD were to compute a Gross Monetary Adjustment Rate to include reversal values, this would not be a meaningful indicator for overall inventory accuracy. The value would only be representative for those specific line items inventoried at a given point in time.

The data and statistics on the DoD Inventory Control Effectiveness report were not intended to be representative of the overall accuracy of the DoD inventory. The Inventory Control Effectiveness report portrays the results of the items the DoD physically inventoried during a specific period of time: current quarter and year-to- date. The Department concentrates its inventory resources on those items that are known or suspected to be in error and on those items that it considers most important, such as controlled items. This resource commitment is in keeping with the overall inventory control philosophy and policy that, "Resources shall be directed toward achieving force readiness goals such that maximum returns will be derived from the resources applied." In short, if it were possible, the Department would never expend resources to inventory an item that is correct. Conducting physical inventories on items where the inventory is already correct does not improve the overall accuracy of the DoD inventory.

The DoD Inventory Control Effectiveness report does, however, contain some measures that give insight into the overall accuracy of the Department's inventory. Two percentages (**GROSS ADJUSTMENT RATES**) are calculated by dividing the total annual dollar value of gross adjustments by the average dollar value of the total inventory and the total dollar value of the items physically inventoried during the year, respectively. The two resultant values are then multiplied by 100, converting the decimal values to percentages.

-- Definitions of source data:

Gross Adjustment Dollar Value: The absolute value of the sum of the dollar value of the total validated annual gain and loss adjustment transactions less the appropriate reversals.

Average Inventory Value: The cumulative sum of the monthly dollar values of all on-hand materiel divided by 12.

Value of Items Physically Inventoried: The sum of the dollar values of all on-hand materiel for each of the items inventoried during the year.

The gross adjustment rates are significant measures of the effectiveness of the physical inventory control program because they reflect the net result, in terms of dollars, of the effectiveness of all the functions affecting inventory accuracy. The emphasis of the DoD physical inventory control program is on conducting inventories on those items that are likely to be in error; therefore, the gross adjustment rate as a percent of the items inventoried will be high relative to that which would be expected if all items were inventoried. The gross adjustment rate as a percent of the total average inventory provides a rate that is probably a little lower than the rate that would result if all items were inventoried. Therefore, the two adjustment rates form upper and lower bounds of the true adjustment rate for the entire inventory. The current DoD-wide upper and lower bounds for general supplies are approximately 5 and 2.5 percent, respectively.

Lastly, it is important to understand causative research and the reversal transactions that result from it have a two fold purpose. The first purpose of causative research is to identify,

through the collective review of a large number of cases, systemic problems such that corrective actions can be effected. The second purpose, of equal importance, is to insure that the inventory record, which was corrected previously at the time of the adjustment, was corrected for the right reason. Causative research often points out that the original variance occurred due to the improper posting of a supply transaction, such as a receipt or issue. When this condition is discovered during causative research it is necessary to effect the proper posting of that supply transaction. In order to do this and insure the record quantity and the on-hand quantity remain in agreement, a reversal transaction must be posted along with the other supply transaction. A reversal does not negate the fact that the item had a variance nor should it be double counted; to do so would indicate the item quantity was out of balance twice when, in fact, it was not. Likewise, if the financial (dollar) records are to remain accurate the reversal must debit the current quarter's gross adjustments, otherwise the true financial impact (actual physical gains or losses) would be obscured.

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RECOMMENDATIONS

- **RECOMMENDATION 1:** The GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to improve internal controls over air station inventories by ensuring that air stations perform their research of inventory errors within the specified time in order to increase the likelihood of identifying and correcting inventory problems. (p. 35/GAO Draft Report)

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DOD RESPONSE: Partially concur. The Department does not agree that the data collected by the GAO indicates internal control problems or that systemic research problems exist. All the causative research at one of the air stations was completed within the prescribed 15 days. The second air station, while exceeding the prescribed timeframes in 11 of the 17 cases, completed 9 of the 11 within 28 days of the allowed time frame and the one case used as a qualifier by the GAO was clearly an outlier and as such is not representative. The third air station, which significantly exceeded the allowed timeframes, was a special case in that it had an unusually large causative research case load. A contractor had been hired to count all

repairable assets. This effort encompassed over 10,000 inventory records, which could understandably prevent the completion of the research phase within the prescribed timeframes. This air station, therefore, is also not representative of air stations in general.

The Department does agree that, by its nature, causative research is a difficult and labor intensive task, which becomes more difficult and less fruitful with the passage of time. The Department could concur with a recommendation that stated, "The Commander, Naval Supply Systems Command, should review the research program and develop approaches to assist activities in completing effective causative research in a timely fashion." (The Navy will complete this review by the beginning of next Fiscal Year.)

- **RECOMMENDATION 2:** The GAO recommended that the Secretary of the Navy direct the Commander, Navy Supply Systems Command, to improve internal controls over air station inventories by ensuring that air stations fully implement the required independent quality control program for appraising physical inventory functions in order to verify that the physical inventory process is properly working. (p. 35/GAO Draft Report)

See comment 27

DOD RESPONSE: Partially concur. The DoD disagrees with the Recommendation as stated. The GAO recommendation implies that a fully implemented independent quality control program is required to improve internal controls by verifying that the physical inventory process is working properly. The GAO report, however, has not specifically identified deficiencies to indicate that the physical inventory program was not working.

The DoD disagrees that an independent quality control program is the only method for attaining inventory accuracy objectives. The DoD has stressed individual accountability in order to institutionalize quality control at the lowest possible level. The DoD objective is to incorporate quality into the processes itself (whether it be receiving, ordering, storing, or taking of physical inventory), which requires quality control emphasis on a daily basis at the lowest levels.

The DoD agrees that independent reviews are necessary to sample the effectiveness of the program, as well as bring a fresh

perspective and/or when known or suspected problems are evident. The Department could concur with a recommendation that states, " The Commander, Navy Supply Systems Command, should take action to ensure that air stations fully implement the required independent quality control program." (The Navy will ensure this is done on or before the end of this fiscal year.)

- **RECOMMENDATION 3:** The GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to improve internal controls over air station inventories by ensuring that the air station commands more aggressively oversee air station inventory practices to identify problem areas and take corrective action for improving inventory record accuracy. (p. 35/GAO Draft Report)

Now on p. 27

DOD RESPONSE: Partially concur. The DoD does not agree with the GAO conclusion that internal controls are ineffective in ensuring that air station commands oversee air station inventory practices to identify problem areas and take corrective action for improving inventory record accuracy. The Department does, however, agree that the fleet commands can improve in documenting trend analysis of key inventory management indicators and in formalizing results of inventory accuracy initiatives. The Department could concur with a recommendation that states, "The Commander, Naval Supply Systems Command, should take action to ensure air station commands properly document oversight and corrective actions for improving inventory record accuracy." In order to improve in this area, two workshops have been scheduled at the end of June 1989 for field activities and type commanders. These workshops will also address all the other physical inventory program requirements. (See DoD Response to FINDING E.)

- **RECOMMENDATION 4:** The GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to improve internal controls over air station inventories by ensuring that the inventory error classification system is improved to provide better specificity for classifying the causes of inventory errors so that higher management (commands) can take appropriate action. (p. 35/GAO Draft Report)

Now on p. 27

DOD RESPONSE: Partially concur. The Department does not agree with the GAO conclusion that the error classification system

lacks precision. The 34 codes provide the maximum possible range when using a one digit character. The error code definition provides information on (1) the function/operation in which the error occurred (receiving, storage, inventory control or physical inventory), and (2) the type of transaction error (i.e., data entry, duplicate posting or not posted). The error code definition also allows the Navy to capture information on avoided adjustments that are resolved during preadjustment research, as well as during causative research. The current coding structure provides ample codes for error identification, activity use, and for higher command summarizations. See DoD response to FINDING E.

The examples highlighted in Table 3.1 of the GAO report indicate a possible execution problem at the local air station. To ensure consistency and enhance user knowledge, the Navy is developing a competency based certification training module to specifically address error classification code selection and analysis. This module is scheduled for delivery in June 1989.

- **RECOMMENDATION 5:** The GAO recommended that the Secretary of the Navy, in order to provide an additional focus on this area, designate inventory management improvement as an issue that will receive special emphasis in Financial Integrity Act assessments, and target this area for an overall evaluation by the Navy. (p. 36/GAO Draft Report)

Now on p. 27

DOD RESPONSE: Concur. Inventory management is an area of concern and high level interest. Current Department policy, DoD Instruction 4140.35, specifically mandates review of physical inventory controls as part of the requirements implementing the Federal Manager's Financial Integrity Act. Additionally, other ongoing actions to improve inventory management (including the physical inventory control program) within the Navy include the semiannual flag level inventory accuracy improvement program, Supply Management Inspections, and designation as an item of special interest for command inspections. The designation of functions for review during the following year is an annual process, which involves review and analysis of control management reports submitted to the Secretary of the Navy, evaluation by the Internal Control Systems Coordinating Committee (audit, inspection, investigation, and other control components of the Department of the Navy), and evaluation by the Department of the Navy Review and Oversight Council (Under Secretary, Assistant

Secretaries, Vice Chief of Naval Operations, Assistant Commandant of the Marine Corps, and Inspector General). The function of inventory control will be addressed during this process, in accordance with existing policy.

- **RECOMMENDATION 6:** The GAO recommended that the Secretary of the Navy direct the Commander, Naval Supply Systems Command, to provide additional measures for evaluating the effectiveness of each air station's physical inventory program. (p. 45/GAO Draft Report)

Now on p. 32

DOD RESPONSE: Partially concur. The GAO Recommendation implies that the Navy should adopt the new measures that GAO has defined and used by the GAO in this report, specifically record accuracy rate and monetary adjustment rate. The Department strongly disagrees with the utility of either measure (as documented in the DoD responses to FINDING B).

The Department concurs that the current Inventory Control Effectiveness report measures do not reflect the overall accuracy of DoD inventories; however, the Navy has gone well beyond the Inventory Control Effectiveness measures in their implementation of Statistical Accuracy Techniques and Measures Program. The GAO did not evaluate the Statistical Accuracy Techniques and Measures Program. The GAO report does not comment or review the majority of the existing performance measures used by the DoD or the Navy. The DoD is implementing an annual statistical sampling program DoD wide. An approved Military Standard Transaction Reporting and Accounting Procedures change (providing the procedures for the annual statistical sample) will be issued in July 1989.

- **RECOMMENDATION 7:** The GAO recommended that the Commander, Naval Supply Systems Command, require that higher commands evaluate (1) separate inventory accuracy rates for scheduled and unscheduled inventories and (2) inventory accuracy rates that reflect all inventory adjustments before deductions are made for low value errors and reversals of prior period adjustments. (p. 45/GAO Draft Report)

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DOD RESPONSE: Nonconcur. The Department disagrees that scheduled and unscheduled inventories should be reviewed and evaluated separately (see the DoD Response to FINDING G). The

Department also disagrees that inventory accuracy rates should reflect all inventory adjustments before deductions are made for low value errors and reversals of prior period adjustments (see the DoD Responses to FINDINGS I and J).

- **RECOMMENDATION 8:** The GAO recommended that the Commander, Naval Supply Systems Command, ensure that the Statistical Accuracy Techniques and Measurements Analysis program is properly implemented at the air stations having the required computer system. (p. 45/GAO Draft Report)

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DOD RESPONSE: Partially concur. The GAO Recommendation implies the Statistical Accuracy Techniques and Measurements Analysis program is not properly implemented at the air stations having the required computer system. The Department disagrees on the basis that this is not, in fact, the case, nor has the GAO demonstrated this is the case; consequently, the GAO Recommendation provides no basis for DoD action. The Department suggests the alternative recommendation contained in the DoD Response to Recommendation 9 be adopted and Recommendation 8 be deleted. (Also see the DoD Response to FINDING H).

- **RECOMMENDATION 9:** The GAO further recommended that the Commander, Naval Supply Systems Command develop and implement statistical sampling programs for the other air stations as well. (p. 45/GAO Draft Report)

Now on p. 32

DOD RESPONSE: Partially concur. The GAO Recommendation implies that the Navy has no plans to develop and implement statistical sampling programs for the other air stations. As of September 1988, $24,437 million or 83 percent of the total Navy wholesale/retail stock point general supplies inventory was covered. The Norfolk and North Island Naval Air Stations provided their first Statisticcal Accuracy Techniques and Measurement Analysis Program reports in second quarter Fiscal Year 1989. The remaining Uniform Automated Data Processing System for Stock Points activities will be fully implemented by September 1989. For the activities that are not supported by the Uniform Automated Data Processing System for Stock Points (the 10 percent of the total inventory value), the Statistical Accuracy Techniques and Measurement Analysis Program capabilities were incorporated as a Stock Point ADP Replacement modernization

requirement and will be delivered during the 1990s. The Department could concur with a recommendation that states, "The Commander, Naval Supply Systems Command should evaluate current statistical sampling deployment plans and determine if they can be accelerated or if alternative sampling programs could be deployed in the interim." The Navy will make this evaluation by the end of this fiscal year. (See the DoD response to FINDING H.)

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